

1. STRATEGIC SECURITY, INTERNATIONAL TREATIES AND AGREEMENTS, AND COMBATTING PROLIFERATION

[Related topics: 2.4, 4.5, 4.11, 4.31, 4.32, 4.41, 4.45, 4.47, 4.52, 4.60, 5.29, 5.30]

1.1 Examine the role of nuclear weapons within the new strategic triad: what are the roles, missions, and tradeoffs of nuclear weapons within the concept of global strike? (See also topics 1.27, 1.36)

- What are the tradeoffs of nuclear weapons versus advanced conventional weaponry? When can/should one be substituted for the other?
- Are there specific targets that require a nuclear weapon (hard and deeply-buried targets (HDBT), CBW facilities)?
- Is increasing reliance on conventional global strike marginalizing U.S. nuclear weapons and undermining U.S. nuclear deterrence?
- Does U.S. conventional preeminence create unintended incentives for nuclear proliferation?
- Do today's non-nuclear force capabilities meet future deterrence requirements?
- What impact do the laws of armed conflict have on nuclear weapon employment in the post Cold-War environment?
- Discuss suggested changes to nuclear doctrine and/or roles and missions for nuclear weapons in the post-Cold War environment.
- What measures of effectiveness should be used in assessing tradeoffs among the different legs of the triad?
- Discuss or suggest possible force structure requirements that might better enable the U.S. to expedite realization of the new Triad.
- What is the future of the ICBM force, the bomber force, the SSBN force?
- Explore the possible consequences of nuclear first-use by the U.S. or some other nation or non-state actor.
- What might be the international political, diplomatic, and strategic responses to the first use of a nuclear weapon in combat?
- What are the arms control implications of dual-use long-range ballistic missiles? (i.e. common missiles delivering conventional or nuclear weapons?)

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Priority: 1

Key terms: PGMs, HDBT, CAV, nuclear missions, non-nuclear weapons, global strike, New Triad

1.2 How can we deter non-state actors from acquiring, using, and/or proliferating WMD? (See also topic 1.20)

- Are different policy instruments required for deterring states and non-state actors?
- Does state-sponsorship alter this equation? How?
- Is it practical for terrorists to acquire or employ sophisticated delivery systems, including ballistic missiles?
- How is deterrence inherently idiosyncratic—that is, unique to each actor?

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Priority: 1

Key terms: WMD acquisition and use, deterrence, non-state actors, state-sponsored terrorism

1.3 How will arms control agreements impact future air and space operations and force structure? (See also topic 1.4)

- Would START, INF, or other agreements, need to be modified to optimize conventional ICBMs, or other conventional alternatives?
- What would be the political, financial, operational, compliance, and implementation ramifications?
- Will existing agreements conflict with U.S. policy regarding USAF doctrine for space?
- Should the U.S. review further adherence to existing arms control agreements?
- Citing past examples, discuss potential impact of the duration and unintended consequences of arms control.

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Priority: 1

Key terms: UAVs, CAVs, space weapons, conventional ICBMs/SLBMs, INF

1.4 How do existing arms control agreements limit the integration of advanced technology into modern operational concepts? (See also topic 1.3)

- Discuss the impact of advances in technology (e.g. UCAVs, hypersonic weapons, non-lethal weapons, air-launched cruise missiles) in relation to any of the following treaties and/or agreements:
 - CFE or the adapted CFE regime
 - START
 - CWC (e.g. relationship between the regime and non-lethal weapons)
- Explore and discuss the escalatory nature of advanced conventional weapons.

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Priority: 1

Key Terms: UCAVs, hypersonic weapons, non-lethal weapons, air-launched cruise missiles

1.5 Examine the Open Skies Treaty.

- How does the U.S. benefit from conducting observation missions in the Open Skies Treaty?
- Conduct a cost/benefit analysis of the Open Skies Treaty regime.
- What might be some other cost effective alternatives to the Open Skies treaty?
- Has the implementation of the Open Skies Treaty met or exceeded the initial expectations of the treaty's negotiators?

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Priority: 1

Key Terms: OSCC, OC-135

1.6 What are Islamic attitudes toward the legitimacy of international law and international agreements?

- Do they differ from those of the West?
- If so, what are the implications for the potential success of arms control and other diplomatic means to address global security issues such as proliferation?
- How does the global security environment shape interpretations of Islamic laws and their relationship to international law and agreements?
- If so, discuss the implications regarding adherence to the laws of war.

POC: Dr. Brent Talbot (USAFA, (719) 333-9425, brent.talbot@usafa.af.mil)

Priority: 1

Key Terms: Islamic law, international law, multilateral regimes, LOAC, LOW

1.7 How successful has U.S. counterproliferation policy been in the past five years?

- How well does the public understand these policies?
- How effective are current approaches?

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Priority: 1

1.8 Assess the effectiveness of the global nonproliferation regime.

- Should the NPT remain the cornerstone of the international nonproliferation regime?
- How should the international nonproliferation regime be broadened?
- How should U.S. diplomatic efforts emphasize the idea that peaceful nuclear energy is not an unconditional right?
- Propose suggestions for improving supplier regimes.
- Suggest a strategy for the U.S. to assist other nations in rationalizing their national export control laws in an effort to standardize laws that apply to all states.
- Are multilateral organizations still relevant with regard to these efforts?
- Suggest ways to improve international cooperation within the NPT regime.
- Reassess the “core agreement” within the NPT between nuclear weapons states and non-nuclear weapons states.
- How can regional security frameworks bolster the international nonproliferation regime?
- To what extent has proliferation really occurred?

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Priority: 1

Key Terms: NPT Review Conference, Nuclear Weapons states, Non-nuclear Weapons states, Nuclear Suppliers Group

1.9 One of the highest national priorities is ensuring the capability to dissuade, deter, and defeat adversary use of weapons of mass destruction (WMD). This requires that the DoD have an array of capabilities across eight disparate mission areas. In the USAF, the capabilities to address these mission areas are widely scattered across functional communities, field operating agencies, and the MAJCOMs. Is the USAF correctly organized to Combat Weapons of Mass Destruction?

- Does the lack of a single center of gravity for these capabilities hinder the USAF's ability to effectively combat WMD?
- As USSTRATCOM moves toward creating a centralized approach to addressing these missions, how should the USAF organize to support these emerging requirements?
- Evaluate how the USAF can best support Warfighter capability across the range of Combating WMD mission areas.
- Determine whether the organizational structures—at Headquarters, MAJCOM, Wing and USAF-wide—are optimal for ensuring a robust capability for USAF to meet COCOM requirements related to countering the WMD threat.

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Priority: 1

Key Terms: National Strategy to Combat WMD, National Military Strategy to Combat WMD, USSTRATCOM, C-CBRNE roles and responsibilities, venue, timing, lifecycle, gaps, institutional, strategy, implementation.

1.10 Examine the potential C-CBRNE roles and missions across the Services for remotely controlled, unmanned vehicles (land, air, & sea).

- What are the current limiting factors to employing such vehicles (resources, technology of the vehicle, technology of the on-board package, CONOPS, etc.)?
- What types of packages could be useful on such an asset (standoff/point detectors, EO/IR camera, agent collection sampler)?
- How can these be used for improvements in passive defense (current CONOPS)? offensive operations (in conjunction with an Agent Defeat weapon)? How about the other pillars of C-CBRNE?
- Can a modular, flexible suite of packages be developed for use on a variety of vehicles (across all mediums, and for all Services/Agencies)?
- Can the DoD leverage the needs of other Agencies to reduce R&D/acquisition costs in the development process, or are the capabilities each group needs just too different?
- How can these vehicles be employed to do this mission? Physically launched by personnel? Launched by another weapon system (from the belly of an aircraft)? Launched automatically from a pre-positioned location without physical contact by personnel?

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Priority: 1

Key Terms: Remotely controlled unmanned vehicles, unmanned aerial vehicles, UAV, aerostats.

1.11 Examine and assess the existing definitions for C-CBRNE and WMD passive defense and consequence management. Examine and assess the roles and responsibilities of the various DoD and government authorities in passive defense and consequence management. (See also topic 1.12)

- What activities should be classified as passive defense?
- What activities should be classified as consequence management?
- What level of capability should consequence management seek to restore (full pre-attack capability or minimum essential services/capabilities)?
- Should the situation (i.e., hostile or permissive environment) dictate whether activities are classified as passive defense or consequence management?
- What should the role of the DoD (particularly the Air Force) be in domestic consequence management following a CBRNE event?
- What should the role of the DoD (particularly the Air Force) be in foreign consequence management following a CBRNE event?

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Key Terms: Consequence management, passive defense, DoD support to civilian authorities, WMD consequence management, USNORTHCOM, FEMA.

1.12 Assess current definitions of weapons of mass destruction (WMD) and discuss whether they are adequate to capture current and emerging threats. (See also topic 1.11)

- What criteria should be considered when proposing a definition (e.g. effects-based vs. threshold-based, political aspects, others)?
- Are some threats so distinctive they should be addressed separately? For example, should high-yield explosives be included as WMD with chemical, biological, radiological, and nuclear (i.e., CBRNE) weapons?
- Should weapons of mass disruption be included in the definition? Why or why not?
- Are there technologies that might be captured by too broad of a definition that the United States would not like to see denoted as WMD (e.g., directed energy weapons)?
- What are the potential proliferation or legal implications of differing definitions?

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Key Terms: Weapons of Mass Destruction, WMD, CBRNE, definition, effects-based, threshold, high-yield explosives, weapons of mass effects, weapons of mass disruption.

1.13 Examine the intersections between Force Protection, Homeland Security (HLS), and Homeland Defense (HLD) in achieving C-CBRNE objectives; discuss the organizational stove-pipes and propose solutions to better leverage the efforts of the various military (active, guard, and reserve) and other government organizations.

- Determine/define the intersections between relevant DoD and other government organizations.
- Discuss potential synergies and redundant efforts.
- Conduct a gap analysis to determine how C-CBRNE could be better integrated into Force Protection, Homeland Security and Homeland Defense.
- Are there different implications for peacetime vs. wartime in terms of organizational lines of authority for C-CBRNE?

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Keywords: Force protection, CBRNE, Homeland Security, HLS, Homeland Defense, HLD, organization, tools, expertise, CONOPs, technologies, peacetime, wartime, stove-pipes

1.14 Assess how the DoD and other government and civilian organizations support combating WMD-related science and technology (S&T) needs.

- Identify combating WMD S&T organizations and activities.
- Identify S&T shortfalls and duplications of effort. Propose solutions to cover shortfalls and avoid duplication of effort in S&T (e.g. the development of a forum for national labs & DoD, a single oversight body).
- Examine the role of private industry in combating WMD S&T activities. Is there potential for increased collaboration?
- Discuss approaches to identifying new areas/ideas for combating WMD S&T.
- Assess the potential impact of the new USSTRATCOM and DTRA relationship.
- Emphasize S&T relevant to counterforce capabilities (including improved intelligence, surveillance, and reconnaissance capabilities).

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Key Terms: Science, technology, S&T, national labs, DoD, shortfalls, duplication of effort, organization.

1.15 Examine the Air Force role in the Proliferation Security Initiative (PSI) interdiction mission.

- Discuss how the Proliferation Security Initiative applies to the USAF. What capabilities does the USAF require to conduct an aerial interdiction or support ground/maritime interdiction?
- What are the current USAF shortfalls in terms of organize, train, and equip to support these missions?

- Propose Rules of Engagement for aerial interdiction of CBRNE materials, technology, or expertise. What are key considerations in formulating TTPs for this mission?
- Discuss the legal implications of aerial interdiction.
- The researcher may choose to use case studies of lessons learned in the war on drugs, enforcing no-fly zones, maritime interdiction, or other aerial interdiction.

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Key Terms: Proliferation Security Initiative (PSI), capabilities, equipment, policy, ROE, aerial interdiction, drug war, no-fly zone, maritime interdiction, WMD interdiction, case study.

1.16 How can the USAF better protect the total installation population, including Reserve, Guard, coalition partners, contractor/civilians, and dependents to ensure they are prepared to survive and operate in a post-CBRNE event or high-threat environment? (See also topic 1.18)

- What functions should/should not be outsourced due to CBRNE or high-threat environments? Discuss the political and legal implications of outsourcing.
- How should this issue apply to third country nationals?
- What are the primary considerations for commanders when making decisions about protecting civilians from CBRNE effects?
- What are the legal implications for protecting non-military personnel? (e.g. vaccination, protective gear, training.)

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Priority: 1

Key Terms: Mission essential personnel, total force, contractor integration, military outsourcing, force protection, Reserve, Guard.

1.17 Examine the impact of restriction of movement (ROM) including social distancing, quarantine, and isolation on military operations.

- How does a commander carry out effective operations while adhering to ROM requirements?
- What information is needed to evaluate risks and benefits of continued operations?
- What are the legal and logistics ramifications of imposing ROM? Identify the limits of the commander's authority to impose ROM (see AFI 10-2603).
- Examine lessons learned from quarantines imposed during the spread of Severe Acute Respiratory Syndrome (SARS). Discuss the implications of the successes and shortfalls for military operations.
- What are the key points in making the decision to impose ROM (numbers, extent of contagion, mission impacts, legal impacts on communities and host nations, etc.)?

- Consider the operations impact of ROM associated with containing pandemic influenza.

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Keywords: Biological warfare, biological defense, Severe Acute Respiratory Syndrome, SARS, quarantine, contagion, restriction of movement, host-nation agreements on restriction of movement, civil authorities, civil support, DoDD 6200.3 *Emergency Health Powers on Military Installations*, AFI 10-2603 *Emergency Health Powers on Air Force Installations*.

1.18 Passive defense against WMD at Joint and Combined operations bases pose significant operational challenges for commanders. Resolving many of these challenges may require a new approach to passive defense operations. (See also topic 1.16)

- How should the USAF handle Allies/Coalition/U.S. Joint Forces that are not at the same level of readiness? Should the USAF provide them with equipment, medical supplies, personal or collective protection?
- How should we train/exercise Joint/Coalition forces to operate in a CBRNE environment?
- Is technology transfer a concern? Should it be?
- The researcher may want to conduct a case study analysis (e.g. examine Joint operational experience in the Gulf War or OIF).

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Priority: 1

Key Terms: Force protection, passive defense, Joint, Allies, doctrine, civilian, military, CBRN, force protection, operations, fixed-site, doctrine, policy, coalition, biological warfare, chemical weapons.

1.19 What are the proliferation implications of transnational Biotech corporations?

- Should materials and expertise transfers within/between multi-national companies be monitored and if so, how?
- How should the U.S. government engage the Biotech industry to address potential transfers?
- Identify potential areas of proliferation concern with regard to transnational corporations.
- Examine dual-use export control legislation and multilateral agreements. Assess their implications for transnational corporations. Identify areas for improvement in these regimes.
- What are the strategies to identify and track dual-use technology in this context?

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Priority: 1

Key Terms: Proliferation, transnational corporation, technology transfer, dual-use technology, export controls, biotech industry.

1.20 Examine deterrence-related issues.

- What does deterrence mean today?
- Who are we trying to deter?
- What actions/events are we trying to deter?
- What are the requirements necessary for deterrence to function?
- How do we define deterrence success/failure?
- What are the consequences if deterrence fails?

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Priority: 2

Key terms: deterrence, minimum deterrence, strategic deterrence, inter-war deterrence

1.21 What benefits does the U.S. derive from the Cooperative Threat Reduction (CTR) program?

- Is the United States providing an indirect subsidy for Russian weapons programs?
- Has CTR proven of value overall? How do you evaluate the effectiveness of CTR?
- Are there alternatives to CTR that achieve the same end?
- Is CTR expandable to other countries, such as Pakistan and India?
- Is the CTR expandable to other arenas in addition to nuclear and CW programs, such as BW, or missile technologies, etc?

POC: Mr. Brandon Buttrick (STATE, AC/SNI, (202) 647-9336, buttribr@state.gov)

Priority: 2

Key terms: Cooperative Threat Reduction (CTR), Russia, United States

1.22 What is the potential impact on regional stability and crisis management of deploying U.S. missile defenses in any of the following regions? (See also topic 1.37)

- India-Pakistan?
- Northeast Asia?
- Middle East (Syria, Israel)?
- China-Taiwan?

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Priority: 2

Key terms: missile defense, regional stability, crisis management

1.23 How important is cruise missile defense (e.g., homeland, theater) to future U.S. security strategy?

- What is the status of existing cruise missile defense capabilities?
- What emerging technologies exist for cruise missile defense?
- What are the costs involved?
- Define the threat.

POC: Dr. Tara Drozdenko (STATE, (202) 647-9988, tarad@state.gov)

Priority: 2

Key Terms: cruise missiles, missile defense

1.24 What should the U.S. response be to a nuclear weapon test by another state? (See also topic 1.25)

- Peer competitor (e.g., Russia, China)?
- Regional Competitor (e.g., North Korea, Iran)?
- Non-aligned country (e.g., India, Brazil)?
- U.S. rationale and conditions to allow testing?

POC: Dr. Smith, INSS, (DSN 333-2717, (719) 333-2717, james.smith@usafa.edu)

Priority: 2

Key Terms: nuclear weapons, testing, proliferation

1.25 What would be the international political, diplomatic, and strategic responses to the first use of a nuclear weapon in combat? (See also topic 1.24)

- Possible consequences of first use of nuclear weapons by another state or a non-state actor during peacetime or conflict.
- Circumstances of first use, consequence management, and the international response.

POC: Dr. Kerry Kartchner (DTRA/ASCO, (703) 767-5713, kerry.kartchner@dtra.mil)

Priority: 2

Key Terms: nuclear weapons, first-use

1.26 Examine U.S./China strategic security relations.

- What would be the usefulness of institutionalizing a strategic dialogue with China on missile defense, regional security, energy security, and deterrence?
- What is the impact of globalization on the above aspects of U.S./China relations?
- What are the implications of China-Russia relations for U.S. security?

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Priority: 2

Key Terms: strategic dialogue, Sino-American relations, missile defense, regional security, energy security, deterrence

1.27 Is there a future for U.S. forward deployed nuclear weapons in Europe? (See also topic 1.1)

- Is this a requirement of NATO?
- How can production policy and force size asymmetries between the U.S. and Russia be resolved?
- What are the advantages and disadvantages of maintaining the current posture?

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Priority: 2

Key Terms: SSBNs, SLBNs, START

1.28 How will (is) the U.S. civil nuclear energy initiative (agreement) affecting the strategic balance and regional stability in South Asia and Asia?

- Should the U.S. encourage a strategic build-up by India?
 - What are the advantages and disadvantages?
- How can the U.S. limit an arms race in Asia and South Asia?
- What type of conventional buildup should the U.S. encourage and assist India to pursue?
- What other forms of military cooperation should the U.S. seek with India?

POC: Dr. Bernadette Kilroy, (STATE, ISN\SPO, (202) 736-4235, kilroyba@state.gov)

Priority: 2

Key Terms: Missile Defense Agency, Ship-based missile defense (SMD), Patriot Advanced Capability-3 (PAC-3)

1.29 For several decades U.S. policy has prohibited the reprocessing of fuel from nuclear reactors due to proliferation concerns. The increasing demand for energy and waste storage issues contributes to the basis for reconsidering this policy. What policy is appropriate today?

- Examine the benefits and problems associated with other nations' reprocessing programs.
- What is the potential for established/new extraction technologies (i.e., PUREX/UREX)? What are their proliferation characteristics?
- What would be the ramifications of a new policy allowing reprocessing?

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Priority: 2

Key Terms: Reprocessing, nuclear fuel cycle, nuclear material

1.30 Examine aero medical evacuation policies in a contaminated environment.

- What are the national policies on medevac of contaminated patients or remains?
- What is the capacity for the evacuation of contaminated patients?
- What are the requirements for noncombatant evacuation operations (NEO)? What are the political/legal ramifications for the evacuation of contaminated civilians?

- Is there a medical evacuation requirement? Is there a mobile medical unit requirement?
- Investigate the potential for medical CRAF (Civil Reserve Air Fleet) in the event of a contaminated casualty surge—would CRAF provide back-flow from theater?
- What modalities are necessary?
- How should levels of decontamination be determined prior to transport?
- Are there case studies for comparison?
- What are the work-arounds in lieu of transporting?

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Priority: 2

Key Terms: aero medical evacuation, BW, contamination, mobile medical unit, med evac, Civil Reserve Air Fleet, decontamination, case study, transport, work around.

1.31 Examine the threat posed by air, sea, and land Unmanned Vehicles (UV) and potential countermeasures.

- What is the threat? How might an adversary use commercial UVs as a warfighting weapon or weapon of terror? Combined with CBRNE?
- What role might the USAF be assigned or how can it contribute to defending against UVs? What are effective countermeasures against them?
- Identify the key issues regarding UV delivery of chemical or biological weapons (CBW). Which countries or groups might have the capability to use them as CBW delivery systems?
- How is it possible to regulate UVs? Assess the extent to which current domestic and international flight regulations apply to UVs.
- Would proliferation prevention measures be effective against this threat? Why or why not?

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Priority: 2

Key Terms: Unmanned Vehicle, UAV, CBW delivery, International Civil Aviation Organization, ICAO, Federal Aviation Administration, FAA.

1.32 Examine the lessons learned from mass vaccination programs. How can these lessons be leveraged to increase the effectiveness of future vaccination efforts?

- Review the recent vaccination programs. Analyze differences in policy in the United States and outside the United States.
- How can policy be enforced? Who should receive compulsory vaccinations? Who should be provided vaccinations on a voluntary basis?
- Examine similar Allied/Coalition programs. Explore how host nation programs might affect U.S. forces.
- What can be done in the long term (acquire more vaccines; redirect resources dedicated to vaccine acquisition to other BW preparation methods)?

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Priority: 2

Key Terms: Vaccines, vaccination program, compulsory vaccination, voluntary vaccination, biological warfare, biological defense, Allies, medical records, acquisition, commanders, anthrax, smallpox.

1.33 Identify “best practices” of other nations in addressing C-CBRNE.

- Are best practices applicable to U.S. operations? Which can be adopted for use by the United States?
- The researcher should examine how Allied forces interact with their local civilian populations when responding to a CBRNE incident.
- The researcher should also focus on countries that have extensive experience with readiness for C-CBRNE operations (e.g. Israel, United Kingdom).

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Key Terms: Best practices, passive defense, consequence management, Allies, fixed-site operations, CONUS, doctrine, counterterrorism, civilian, civil-military operations, civil affairs, civil support, force protection, operations, fixed-site, doctrine, policy, Allies, coalition, biological warfare, homeland defense, homeland security, CBRNE, CONOPS.

1.34 Survey and capture recent exercise and wargaming threat scenarios for access denial and terrorism where WMD are employed. Identify realistic scenarios that are under utilized and develop alternative and innovative scenarios for future consideration.

- Conduct a survey of past scenarios.
- Describe how a library of threat scenarios might be developed, maintained, and accessed by exercise or game developers.
- Identify significant trends/areas of omission in WMD scenario development.
- What are the sources and differentiators of WMD scenarios and how have they played out?
- Define important elements that effective WMD threat scenarios should include. Do existing WMD threat scenarios adequately address these elements?
- Brainstorm and develop some innovative WMD threat scenarios that have not been well addressed but merit analysis and game play.

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Priority: 3

Key Terms: Scenarios, access denial, weapons of mass destruction, WMD, force protection, UAV, case study, wargaming, terrorism, CBT simulators.

1.35 Survey CBRNE vulnerability and mitigation strategy assessment tools.

- Identify the various vulnerability assessment tools across DoD agencies and organizations.
- What current and emerging threats do they address?
- Can vulnerability and mitigation tools be combined into more powerful tools?

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Priority: 3

Key Terms: Vulnerability, mitigation, strategy, assessment tools, emerging threats.

1.36 Under what conditions should nuclear weapons be used to preempt or retaliate for chemical, biological, or radiological weapon (CBRW) use?

- Would adopting a declared policy of retaliating against CBRW attacks with nuclear weapons enhance the ability of the United States to deter such attacks?
- Are there physical phenomenon associated with a nuclear detonation that would be effective for defeating chemical or biological agents?
- Would the political consequences and collateral weapon effects outweigh the benefit of eliminating the chemical or biological threat?
- What operational deployment doctrines, planning, and procedures should be considered?

POC: Maj Todd Shull (AF/A3SC, (703) 692-9930, DSN 222-9930, todd.shull@pentagon.af.mil) and Dr. Kerry Kartchner (DTRA/ASCO, (703) 767-5713, kerry.kartchner@dtra.mil)

Priority: 3

Key Terms: CBRW, nuclear retaliation, chemical weapons, biological weapons

1.37 How do we engage U.S. allies (East Asia, Europe, Russia, and South Asia) in U.S. missile defense programs and initiatives? (See also topic 1.22)

- What is their potential role in the U.S. missile defense posture?
- How important is international cooperation to the success of U.S. missile defense policies?
- How should regional efforts to acquire missile defense capabilities (e.g., Japan, Israel, NATO, etc) be integrated with U.S. global missile defense priorities and objectives?
- How will the U.S. missile defense capabilities be integrated into NATO's strategic concept and NATO's emerging missile defense program?
- Examine case studies in cooperative missile defense systems, such as:
 - U.S.-Israel and Arrow program
 - U.S.-Germany-Italy and MEADS (Medium Air Defense System). Examine the "black box problem."
 - U.S.-Russia and JDEC (Joint Data Exchange Center), TMDX.
 - U.S.-Japan and sea-based TMD.

POC: Dr. Tara Drozdenko (STATE, (202) 647-9988, tarad@state.gov)

Priority: 3

Key terms: missile defense, NATO and strategic concept, Arrow program, MEADS, JDEC, TMDX, cooperative missile defense

2. HOMELAND DEFENSE AND COMBATING TERRORISM

[Related topics: 1.13, 1.17, 1.23, 1.32, 1.34, 3.36, 3.45, 3.46, 4.8, 4.9, 4.10, 4.14, 4.20, 4.24, 4.26, 4.33, 5.5, 5.6, 5.38]

2.1 Do U.S. government definitions of Homeland Defense (HD) and Homeland Security (HS), as reflected in current strategies, generate clear expectations regarding DoD and DHS respective roles and missions?

- Are there ambiguities and overlaps between DoD and DHS roles and missions?
- What is the operational effect; e.g., are there important overlaps and/or seams between HD and HS activities?
- Do the definitions set clear expectations for the public? Are steps needed to clarify these roles and missions? If so, make appropriate recommendations.
- What case studies provide illustrations of the expectations regarding DoD and DHS roles and missions?

POC: Mr. Don Herr, Office of the Assistant Secretary of Defense (Homeland Defense), Strategy, Plans, and Resources, OASD(HD)/SP&R, 703-602-5730, ext. 153

Priority: 1

Key Terms: homeland defense, homeland security, definitions, expectations, roles and missions, DoD, DHS

2.2 How can an analyst achieve a temporal paradigm shift such that he can model the situational perceptions, ideology and decision-making of extremist groups?

- Discuss an extremist paradigm as it relates to operational activity (attack planning) in the West?
- How can terrorist paradigms be infused into a “Red Team” of diverse analysts such that, for example, the team is able to emulate the decision-making of a Sunni extremist planning cell in the United States?
- How can this infusion process take place in a conference room setting, given multimedia equipment and/or other instructional/sensitization materials?
- Given only 4, 8, or 16 hours for instruction/sensitization, what data should be introduced and how should it be presented to maximize the effectiveness of the infusion process?

POC: Mr. Rob Cordray, N-NC/J22AV, (719) 554-8640

Priority: 1

Key Terms: Terrorism, Threat Analysis, Red Teaming, Cultural Intelligence, Ethnography, Cultural Anthropology, Psychology

2.3 How do we combat the “spontaneous terrorist?”

- Focus on those who are not affiliated with, supported by, or led by established groups.
- What are the triggers for these sympathetic “bystanders” to take violent action?
- What are the indicators and where do we look for them?
- How can we best intercede to dissuade such action?

POC: Lt Col Donald Shaffer, JCS/J5, (703) 693-2023

Priority: 1

Key terms: Spontaneous terrorist

2.4 Identify and assess adversaries' concepts related to Nuclear, Biological & Chemical (NBC) and radiological weapons use.

- Select a region, nation, or non-state actor and describe its potential for employment of NBC or radiological weapons.
- Consider the political and military purposes of use or threat of use.
- Analyze an adversary's internal political-military dynamic (leadership), rhetoric or stated doctrine, and historical use (if any).
- How likely is an adversary to use NBC or radiological weapons or devices? How can the U.S. deter state and non-state actors from using such weapons? Are current counterproliferation operations an effective deterrent against the use of NBC devices by state or non-state actors?

POC: BG (Ret) Russ Howard, Tufts University, (617) 627-4740

Priority: 1

Key Terms: adversaries, NBC, radiological, U.S. response, adversarial use of NBC, deterrence, terrorism, state actor, non-state actor

2.5 What are the most likely CBRN threats to NORAD/NORTHCOM assets (e.g. industrial accident/transportation accident/sabotage/attack), in priority order, and how was this priority established?

- For each threat, what are the possible actions?
- For each threat, what is the likely progression of the scenario from first detection to military involvement?
- How would N/NC know which threat is developing, or has materialized? (What are the detection conditions/triggers?)

POC: NORAD/J33N (LTC Dickerson/Mr. Greg Playle)

Priority: 1

Key Terms: CBRN threat

2.6 CBRN events are not confined to a given "bordered" area. What are the constraints to NORAD/NORTHCOM interactions across international borders (both Mexico and Canada) and how might they be addressed (legal, international, treaty, physical)?

- What are the homeland defense/civil support implications of each border, both from U.S. to the other nation, and from the other nation to the U.S.?
- What about maritime (coastal) areas (including Great Lakes)?

POC: NORAD/J33N (LTC Dickerson/Mr. Greg Playle), JTF-N (Lt Col Gwen Baker)

Priority: 1

Key Terms: International borders, constraints

2.7 What is the threat posed to CONUS by the current flow of special interest aliens (SIA) across the national borders and what can USNORTHCOM do to counter the threat to our national security?

- What is the extent of the threat?
- What can USNORTHCOM do to assist in countering the threat?
- What are the legal issues associated with this question?
- How does this relate to SOCOM's role?
- What is the impact of legal SIAs versus illegal SIAs?

POC: CDR Patrick Braker, N/NC J22DO, (719) 554-7591

Priority: 1

Key Terms: N/NC J2, intelligence, threat

2.8 How do we begin to develop the architecture to expand the Security and Prosperity Partnership of North America (SPP) to include Mexico to a greater extent?

- What is the optimal security relationship between the U.S. and Canada?
- What is the best vehicle to formalize that relationship?
- What cooperative defense structure best operationalizes that relationship?
- How are the answers to follow-up questions 1-3 impacted by the eventual addition of Mexico?

POC: Dr. Biff Baker, Bi-National Planning Group, BPG, (719) 554-7614, Mr. Mike Hanyok, NC J31, (719) 554-3758

Priority: 1

Key Terms: Canada, United States, Defense, Security and Domain Awareness

2.9 Demonstrations of military force have a proven utility. What might be the utility of demonstrations of cyber force as a crisis management tool?

- Should decision makers regard information operations as comprising an analogous capability as conventional or strategic military forces as tools for managing crises?
- What would distinguish displays, demonstrations, and uses of cyber force in actual practice?
- Is the distinction between offensive and defensive uses of force useful in this context?
- What considerations should decision makers bear in mind when considering displays, demonstrations, or uses of cyber force in the context of a crisis?
- What legal and ethical issues does this raise?

POC: Mark Hewitt, Office of the Assistant Secretary of Defense (Homeland Defense), OASD (HD)/DCCR, 703-681-3030

Priority: 1

Key Terms: cyber force, demonstration of force, information operations, crisis management, offense, defense, legal, ethical

2.10 What should DoD be prepared to do in response to a cyber attack?

- What types of cyber attacks will have an impact on DoD and specifically USNORTHCOM?
- In the Defense Support to Civil Authorities (DSCA) role, what support can USNORTHCOM provide to civil authorities to respond and recover from cyber attack?
- What would be the effect of a cyber attack on the internet structure as a precursor to hostile kinetic action elsewhere?

Point of Contact: Rich Affeld, USNORTHCOM/J39, (719) 554-1589

Priority: 1

Key Terms: National Cyber Response Options, Critical Infrastructure Protection, cyber defense, government responsibility for commercial infrastructure, cyber economy

2.11 How can DoD best contribute to Combating Ideological Support to Terrorism (CIST)?

- NMSP-WOT lists several “indirect” approaches such as understanding that how we plan and conduct our operations can impact on adversary ideology. Are there other indirect approaches and considerations?
- Are there more direct approaches appropriate for DoD?

POC: Lt Col Donald Shaffer, JCS/J5, (703) 693-2023

Priority: 1

Key terms: public diplomacy, strategic information, Combating Ideological Support to Terrorism, CIST

2.12 How best can U.S. Northern Command integrate into the Homeland Security Presidential Directive (HSPD) mandated DHS National Bio-surveillance Integration System (NBIS)?

- Which computer systems/programs are adequate for integrating multiple, disparate data streams, both medical and non-medical?
- Which traditional and non-traditional data systems are vital to a functional NBIS?
- Which non-medical data streams might be medically relevant to NBIS?
- Which near-term surveillance technologies should be aggressively funded to enhance homeland defense and homeland security surveillance capabilities?
- How best to train medical intelligence analysts?

POC: Col Tony Rizzo, N/SGO, (719) 554-0937

Priority: 1

Key Terms: Bio-surveillance, medical/veterinarian intelligence, Department of Homeland Security, Inter-agency effort, training, collection of homeland defense information, HHS

2.13 What are the implications for DoD of mass-casualty terrorist incidents, including at casualty levels well beyond current planning?

- What will the U.S. public and Congress expect of DoD?
- Develop specific scenarios and determine likely requirements for DoD support.
- Conduct survey of current DoD and other federal capabilities.
- If DoD is directed to provide maximum support, would DoD become the Lead Federal Agency (LFA)? What would be the likely effect on DoD capabilities for other operations?
- What are the implications for DoD planning and programming?
- What is a reasonable casualty threshold for planning?
- When and under what conditions should DoD transition its responsibilities to civil authorities?

POC: Mr. Don Herr, Office of the Assistant Secretary of Defense (Homeland Defense), Strategy, Plans, and Resources, OASD(HD)/SP&R, 703-602-5730, ext. 153

Priority: 1

Key Terms: mass-casualty, planning, civil authorities, federal

2.14 What is the acceptable risk in conducting CBRNE remains recovery and processing? (See also topics 2.30, 2.31)

- Explore differences in Military code of "leave no service member behind" (also seen in WTC post 9/11) vs. generally accepted Mortuary Affairs principle of "we will not risk the living for the dead."
- At what point is the value of recovering the dead greater than the health risk to mass fatality management personnel?
- How do we determine the level of health risk to mass fatality management personnel?
- How do political, social, cultural, religious, media, legal, medical and operational factors influence the decision process?

POC: Mr. John Nesler (JTF-CS/J4, (757) 788-6298)

Priority: 1

Key Terms: Risk Assessment, mass fatality management, CBRNE remains recovery and processing

2.15 Examine Federal v. State Responsibilities for Public Safety and Security. (See also topics 2.20, 2.22, 2.28)

- Both the Federal Government and state governments are responsible for public safety and security. Since 9/11, the line between the Federal Government's responsibilities and those of state governments is even more ill-defined
- What are the proper DoD responsibilities in relation to situations where DoD is the Lead Federal Agency or acting as a supporting agency?
 - Examine Federal Government and State Government responsibilities, as defined by statute and regulation.
 - Identify redundancies or seams between these responsibilities.

- Assess and compare Federal Government and State Government expenditures on public safety and security – focused on homeland security – in light of their statutory and regulatory responsibilities and identified redundancies and/or seams.

POC: LTC Jon Sims (Office of the Assistant Secretary of Defense (Homeland Defense), OASD(HD)/HLSI, 703-614-2783 (DSN 224))

Priority: 2

Key Terms: federal government, state government, public safety, roles and responsibilities, overlaps, seams

2.16 Should the DoD fund Civil Support Teams (CSTs)?

- Currently, by law, Weapons of Mass Destruction—Civil Support Teams are funded and certified by the Secretary of Defense and under the operational control of the governors of the states (Title 32, U.S.C.)
- In accordance with Sec. 1403 of the Bob Stump National Defense Authorization Act for Fiscal Year 2004 (PL 107-314), the number of WMD-CST will be 55, one for each State and Territory, including two for the state of California.
- The purpose of this study would be to:
 - Examine and assess the history of the establishment and expansion of the WMD-CST
 - Compare the costs, advantages, and disadvantages of continuing the status quo (DoD-funded with National Guard personnel) and a civilianized WMD-CST (Federally-funded—possibly funded with National Guard personnel) and a civilianized WMD-CST (Federally-funded—possibly by DHS—with civilian personnel)

POC: LTC Jon Sims, Office of the Assistant Secretary of Defense (Homeland Defense), OASD(HD)/HLSI, 703-614-2783 (DSN 224)

Priority: 2

Key Terms: civil support teams (CST), National Guard, military-civilian relationship, Title 32

2.17 How do we measure how well COCOMs are performing in their Homeland Defense mission to detect, prevent, and defeat attacks?

- What are the primary alternative approaches to determine measures of effectiveness for the NORTHCOM mission areas of deterring, detecting, preventing, and defeating clandestine attacks?
- What lessons can be taken from other agencies/mission sets (e.g. Cold War deterrence, counter-drug operations, FBI counterterrorism)?
- How do other combatant commands assess their mission requirements and effectiveness in similar areas?

POC: Mr. Gene Pfeffer (N/NC IC, (719) 554-5913)

Priority: 2

Key Terms: Measures of effectiveness

2.18 What are the optimum education and training curriculum and courses for HLD and Defense Support to Civil Authorities (DSCA)?

- Survey and compare and Homeland Defense/Homeland Security curricula.
- What are the competencies and best practices for HLD/HLS?
- What are the standards for curriculum content for the discipline of HLD and DSCA?
- How can HLD and DSCA curriculum content best be identified?
- What research methodologies and approaches can be used to refine HLD and DSCA curriculum content?
- How should HLD and DSCA courses be structured?
- What is the appropriate balance of HLD and DSCA courses?
- How are the curriculum, instruction and assessment aspects of HLD and DSCA course best served?

POC: Dr. Houston Polson (N/NC J7, (719) 554-7182)

Priority: 2

Key Terms: Education and training, curriculum, instruction, HLD and Military Assistance to Civil Authorities (MACA) subject matter content

2.19 Examine how recent terrorist attacks affected regional security cooperation.

- How has the perceived need for greater protection against terrorism affected border controls and other aspects of national and regional security?
- How have differing perceptions of the threat from terrorism affected regional security cooperation?
- Explore the role of regional security organizations in fighting the war on terrorism.

POC: COL Cindy Jebb (USMA, 845-938-3074) and Dr. Kent Butts (U.S. Army War College, 717-245-3728)

Priority: 2

Key Terms: globalization, terrorism, nation building, multilateral organizations, failed states, regional stability, soft power

2.20 What role should NORAD/NORTHCOM, DoD and its appropriate sub-components play in developing an integrated Federal, state, and local homeland security/homeland defense training infrastructure to support individual and collective training to enhance interoperability? (See also topics 2.15, 2.22, 2.28)

- How can DoD's training transformation efforts be leveraged for support?
- How can DHS' HSPD-8 implementation efforts be leveraged for support?
- How should NORAD/NORTHCOM's Homeland Security/Homeland Defense Education Consortium be integrated with DHS' National Domestic Preparedness Consortium?

POC: Mr. Jan Ithier (N/NC WO, (703) 695-4604)

Priority: 2

Key Terms: Individual education, collective training, training infrastructure

2.21 What key Theater Security Cooperation (TSC) initiatives are required to reduce vulnerabilities and enhance the overall HLD posture of the U.S.?

- Can the Global War on Terrorism (GWOT) be effectively prosecuted in all areas of the NC/SOUTHCOM/PACOM Areas of Responsibility (AORs)? What shortfalls need to be overcome through TSC initiatives?
- What are the special challenges regarding Mexico that must be addressed through an interagency effort?
- What are the strategic issues associated with Canadian participation in regional defense?
- What other TSCs with other countries can be agreed to reduce overall vulnerabilities?

POC: Mr. Toth (NC/J5, (719) 554-7901)

Priority: 2

Key Terms: TSC, GWOT, Canada, Mexico

2.22 Assess potential challenges for civil-military relations from DoD's growing involvement in HD activities. (See also topics 2.15, 2.20, 2.28)

- Does DoD's growing domestic role pose a potential threat to U.S. civil liberties?
 - What problems could arise, for example, if USNORTHCOM is directed to take the lead at a time of national emergency?
- Are current constraints on DoD's role adequate to preserve the principle of civilian control of the military?
- What measures, if any, are needed to ensure that our freedoms are protected?

POC: Mr. Don Herr (Office of the Assistant Secretary of Defense (Homeland Defense), Strategy, Plans, and Resources, OASD(HD)/SP&R, 703-602-5730, ext. 153)

Priority: 2

Key Terms: civil-military relations, civil liberties, civilian control of military

2.23 What is the optimal USG organization for the new strategic environment?

- How should the USG structure itself in order to effectively execute synchronized and integrated multi-agency operations around the globe?
- How would reorganization empower leadership's authority to compel across the interagency?
- Do we need a "Beyond 'Beyond' Goldwater-Nichols?"
- Should DoD and State align their respective global regions? Would this help integration efforts?"

POC: Lt Col Donald Shaffer, JCS/J5, (703) 693-2023

Priority: 2

Key terms: Beyond Goldwater-Nichols, interagency, global regions, new strategic environment

2.24 How do DoD budget processes hinder our ability to maneuver in the new strategic environment?

- What changes can be made to the current 2-year cycle to allow more flexibility to fund “pop-up” requirements?

POC: Lt Col Donald Shaffer, JCS/J5, (703) 693-2023

Priority: 2

Key terms: budget process, new strategic environment

2.25 What are the Centers of Gravity (COG) associated with homeland security (HLS) and/or homeland defense (HLD)?

- Does the United States have a National COG(s)? What must the nation do to protect that COG(s)?
- Does designating a National COG help synchronize the application of the instruments of National Power (DIME: diplomatic, informational, military, economic)?
- What is/are the Military COG(s) associated with HLD?

POC: Mr. Toth (NC/J5, (719) 554-7901)

Priority: 3

Key Terms: Center of gravity (COG), diplomatic, informational, military, economic (DIME), homeland security (HLS), homeland defense (HLD)

2.26 How does bounded rationality contribute to failures of judgment during complex crises?

- How are limits on human judgment and cognitive ability manifested under stress?
- Is it possible to categorize failures in human judgment?
- What environmental variables influence decision making under stress?
- Do these variables change across different categories of failures in judgment?
- This research topic lends itself to a survey of the literature and/or case studies.

POC: Mark Hewitt (Office of the Assistant Secretary of Defense (Homeland Defense), OASD(HD)/DCCR, 703-681-3030)

Priority: 3

Key Terms: crisis management, decision making, human judgment, bounded rationality

2.27 Can international crisis management and domestic incident management be integrated?

- Characterize international crisis and domestic incident management.
- Are these crises and incidents different in terms of objectives, outcomes, processes, and requirements?
- If so, can these objectives, outcomes, processes, and requirements be synthesized?
- What features might characterize a synthesized system for managing both international security crises and domestic incidents?

POC: Mark Hewitt (Office of the Assistant Secretary of Defense (Homeland Defense), OASD(HD)/DCCR, 703-681-3030)

Priority: 3

Key Terms: crisis management, incident management, domestic, international

2.28 What is appropriate NORTHCOM, PACOM, and SOUTHCOM involvement in federal, state, tribal, and local government exercises? (Also see topics 2.15, 2.20, 2.22)

- Identify the exercises being conducted.
- Who are the key players and at what capacity/frequency can they be expected to participate?
- What state and local players should be engaged most frequently and what is the priority by state?
- What funding is available and how can it be 'fenced' for state (all levels) participation in a national exercise program?
- What is required for USNORTHCOM, PACOM, and SOUTHCOM implementation (i.e. budget, scheduling, policy, training, non-DoD coordination etc.)?
- Assist state and local governments in de-conflicting multiples exercises.
- What is the most effective means for collecting and incorporating non-DoD input for exercise Master Scenario Event Lists (MSELs)?
- How can we best disseminate results of exercises (lessons learned, classification)?

POC: Dr. Houston Polson (N/NC J7, (719) 554-7182)

Priority: 3

Key Terms: Exercises, interagency, coordination, participation

2.29 Examine homeland security/defense efforts to prevent and deal with non-catastrophic attacks.

- Is the Catastrophic Incident Index of the National Response Plan adequate to define a “catastrophic attack?” What should be the numeric definition of a “catastrophic attack?” What role should the military play?
- How should the U.S. prepare for a series of attacks that do not cause massive casualties? What are the implications for budgets and other resources should the U.S. need to repeatedly respond?

POC: BG (Ret) Russ Howard, Tufts University, (617) 627-4740

Priority: 3

Key Terms: WMD, terrorism, homeland security, homeland defense, NORTHCOM, civil support

2.30 What is the most effective method to rapidly integrate Federal Interagency Mortuary Affairs (MA) assets with local responder MA organizations? (Also see topics 2.14, 2.31)

- How do we map comparative units/individuals to effectively integrate military capabilities into federal and local units with MA missions?

- What is the best methodology and/or metrics to provide comparisons between military, federal and local MA capabilities (e.g. DOTLMP-F)? Provided comparisons for MA using this methodology.
- Does the current inability to accurately map capabilities result in inefficiencies with sourcing military support? If so, then to what extent? Are there recommendations for more efficient structures to enable better integration capabilities?
- Can the use of MA trained augmentees or modularized MA units provide more effective support?
- Is additional policy required to link NRP level MA guidance further with local and interagency efforts?

POC: Mr. John Nesler (JTF-CS/J7, (757) 788-6298)

Priority: 3

Key Terms: Integration, capability mapping, DOTMLP-F, mortuary affairs, efficient employment

2.31 What is the USNORTHCOM Combatant Commander's intent on the handling of deceased military members from an incident? (Also see topics 2.14, 2.30)

- How will the different jurisdictional issues shape that intent?
- Who will be identified as military?
- If there is different treatment given to military deceased, what is the public perception and how does it affect public trust?
- If states release military remains then what:
 - Special packaging to get them to Dover Port Mortuary?
 - What is the logistics footprint to execute?
 - Would we need the creation of special Armed Forces Medical Examiner site teams for all the bases with dead?
- If separate procedures for the military/civilians are conducted what is the impact on the ability of the military to the civil support mission?

POC: Mr. John Nesler (JTF-CS/J4, (757) 788-6298)

Priority: 3

Key Terms: Mortuary affairs, public trust, civilian casualty procedures, military fatalities

2.32 How do social networks respond and adapt to complex, unanticipated events?

- Is it possible to formulate a useful taxonomy of varieties of shocks to social networks?
- What models exist to understand the impact of these shocks on social networks?
- What characteristics of social networks permit or constrain systemic adaptation to shocks?
- By what means can these characteristics be manipulated in advance?
- What are the priorities for further research in this area?

POC: Mark Hewitt (Office of the Assistant Secretary of Defense (Homeland Defense), OASD(HD)/DCCR, 703-681-3030)

Priority: 3

Key Terms: taxonomy, social networks, unanticipated events, social shock

2.33 What are DoD's and NORTHCOM's roles in critical infrastructure protection (CIP) and protecting the defense industrial base (DIB)?

- How does DoD plan for CIP when the potential target set is huge?
- How should the DIB be defined? How is/should the CIP be prioritized?
- What are/should be NORTHCOM's role in protecting the DIB? CIP?
- What capabilities/force packages are required for protecting and defending CIP and DIB?

POC: Mr. Toth (NC/J5, (719) 554-7901)

Priority: 3

Key Terms: Critical infrastructure, CIP, defense industrial base, DIB

2.34 How can NORAD/NORTHCOM, PACOM, and SOUTHCOM effectively communicate with the various lead Federal agencies acting under the National Response Plan or in the event of a national disaster?

- What methods of communication are used by Federal agencies and how interoperable are they?
- What are the current legal and policy barriers to information sharing?
- How can dissimilar communication systems be integrated for effective HLD, NORTHCOM, SOUTHCOM, and PACOM communications?
- What should be the primary uses of wireless communications for emergency responders?
- How can NORAD/USNORTHCOM effectively utilize non-government amateur communication systems to support national communications in the event of a national disaster?
- What approaches have other homeland security entities used to resolve the integration of interagency communications?
- How can NORAD/USNORTHCOM ensure that it utilizes the SIPRNET only when appropriate?

What are the implications of over classification?

Does the extent of over classification that does occur damage the efforts of the interagency? Coalition cooperation?

By what means might over classification of material be reduced?

POC: Mr. Dan Petitt (N/NC J633, (719) 554-6218); CDR Matt Feely (N/NC J4, (719) 554-0783); Col Richard Iler (NGB-J2, (703) 607-1822)

Priority: 3

Key Terms: Communications, homeland security, national disaster, wireless, communications integration, Federal government interagency cooperation, NORAD/USNORTHCOM

2.35 How does the U.S. Government convey a coordinated message to inform the public to deal with HLS/HLD situations?

- How do we best integrate public diplomacy, public affairs, and the media?
- How does the DoD synchronize with DHS and other agencies?
- How should DoD train and educate its personnel to accomplish synchronization?

POC: Mr. Toth (NC/J5, (719) 554-7901)

Priority: 3

Key Terms: Strategic communications, diplomacy, public affairs, information operations (IO)

2.36 How can NORAD/USNORTHCOM ensure networks are protected against malicious code and vulnerabilities resulting from software design flaws and improper implementation?

- How can vulnerabilities be identified, and their effects analyzed in a timely and realistic way?
- How can dissemination, receipt, acknowledgement, and processing of vulnerability alerts and bulletins be performed in a timely and risk-appropriate way?
- How can instances of these vulnerabilities be discovered in systems and network devices?
- How can the operational impacts of vulnerability remediation be determined, and if those impacts are unacceptable, how can risk assessment and mitigation be performed in a timely and effective way?
- How can remediation of vulnerabilities through the application of corrective measures be performed effectively and in a timely way?
- How can successful remediation be verified, and how can compliance status with respect to alerts and bulletins be assessed and reported?
- What approaches have other combatant commands used to solve this issue?

POC: Maj Rob Peterman (N/NC J6, (719) 554-4922)

Priority: 3

Key Terms: Vulnerability management, patch management, J6

2.37 How can we remove the barriers to communication between DoD, non-DoD, Federal, and First Responders within the NC AOR?

- What are the protocols, procedures, and technologies available to rapidly re-allocate DoD and civilian bandwidth in support of response and recovery operations?
- What national communication interoperability and compatibility standards need to be established?
- How should these standards be implemented and enforced? Is a CRAF for bandwidth a viable concept?
- Which established policies and procedures need to be addressed to remove these barriers?
- What technology exists to support the initiative?

Point of Contact: Maj Dave Mott, N/NC J8, (719) 554-4439

Priority: 3

Key Terms: Communications barriers, spectrum management

3. REGIONAL AND EMERGING NATIONAL SECURITY ISSUES

[Related topics: 1.6, 1.22, 1.26, 1.27, 1.28, 1.33, 1.37, 2.2, 2.8, 2.11, 2.21, 4.23, 4.48, 5.8, 5.36, 5.38]

Transregional Security Issues

3.1 Conduct a regional stability and stabilization assessment.

- Define a region (sub-national, nation, trans-national, multinational) that is subject to instability/failure.
- Specify the severity and extent of the consequences of failure to United States security interests.
- Identify a range of intervention policies/programs/tools and technologies that could increase stability and delay, defer, or prevent failure.
- Identify stakeholders, including state and non-state actors, IGOs, NGOs, and their likely reactions to stabilization efforts, willingness to accept constructive roles in that process, or likelihood to oppose efforts at stabilization.
- Specify DoD roles and DoD partnership roles (interagency and international) in regional stabilization.

POC: Dr James Smith, INSS, 719-333-2717

Priority: 1

Key Terms: failed states, failing states, regional instability, regional stabilization, RSAT (Regional Stabilization Assessment Team), non-state actor, IGO, NGO

3.2 Examine the transition from combat operations to post combat/stability operations.

- Interagency operations: How can we operationalize the strategic level work being done for the reconstruction and support office?
- What are the potential impacts on US force structure (manning equipment, training and resourcing) of the increased emphasis on stability and reconstruction operations?
- What should troop density be in stability and reconstruction operations?
- What is the continuing utility of the phasing construct for designing campaigns?
- How can we define victory in the aftermath of decisive operations to convince the enemy to accept defeat?
- What lessons for post-war stabilization and counter-insurgency can we learn from constabulary models?
- What skill sets are required when the military is forced to conduct stability operations?

POC: LTC Richard Lacquement, OSD (Policy), 703-697-3915

Priority: 1

Key terms: combat operations, stability operations, US force structure, troop density, counter-insurgency, post-war stabilization

3.3 Determine considerations for overseas basing strategies.

- What are cultural factors and impacts/
- How do we address traditional allies versus new cooperative partners?

- How does DoD ensure US forces access during peacetime and contingency operations? How should US forces determine where they should place permanent bases?
- Assess the viability of the concept of cooperative security locations (CSL), and compare them against forward operating sites (FOS).
- Assess interagency funding and ownership issues.

POC: Fernando Manrique, AF/A5XX, 703-697-9601

Priority: 1

Key Terms: overseas basing strategies, traditional allies, cooperative partners, interagency issues

3.4 Examine cultural understanding in planning military operations.

- Assess Effects-Based Approaches in a Cross-Cultural Environment.
- What are the cultural considerations within IO?
- Should military recruitment deliberately target first generation foreigners for regional experience/expertise?
- Assess service related cultural training programs (i.e.: IAS, FAO).

POC: Lt Col Fernando Manrique, AF/A5XX, 703-697-9601

Priority: 1

Key Terms: culture, foreign area officers, international affairs specialists

3.5 Examine the foundations and endurance of US military predominance.

- Identify the political, economic, technological, social, and operational foundations of contemporary US military power.
- What role does US military predominance play in contributing to or detracting from international stability?
- How do other countries view US military predominance?
- Identify and analyze potential threats (internal/external) to US military power.
- What impact would the loss of US military predominance have on the US world role?
- What strategies could the US pursue to extend US military dominance?

POC: Col William “Eric” Herr, SAF/IAG, 703-588-8972

Priority: 1

Key terms: military power, military capability, threat environment, US role in the world

3.6 Evaluate the role of radical Islam in the Middle East, South Asia, and Southeast Asia. (See also topic 3.25)

- Assess the socioeconomic, religious, and demographic factors that contribute to the development of radical Islam.
- Assess the compatibility of radical Islam and democracy in the region.
- Explore the impact of radical Islam on stability in the identified regions.
- Examine the implications of US military presence upon radical Islam.
- Evaluate the effect of US operations in Iraq on the development of radical Islam.

POC: Dr. Ruth Beitler, USMA, 845-938-3999, DSN 688-3999

Priority: 1

Key terms: radical Islam, force protection, religion, democracy

3.7 Evaluate the ability of the United States to effectively integrate national security policy and strategy across the necessary range of agencies.

- Is there an increasing requirement for interagency integration? Why?
- Analyze how the US national security structure integrates global strategy and policy with key nations.
 - Contrast how the US integrates strategy and policy with long-time allies like Great Britain, with how it does so for “coalitions of the willing.”
 - Formulate a framework for understanding the future dynamics of national policy integration and apply that framework to formulate US international integration policy.
- Analyze how US national security agencies integrate global strategy and policy with one another.
 - Is a new PDD-56 needed? Was PDD-56 successful?
 - Can interagency integration policy transcend administrations or must it always be contingent?
 - What models can be applied to understand and improve interagency integration?
 - Should there be one regional division standard (e.g., Unified Command Plan) for the US government? If so, which current model provides the best universal regional standard, and if not, what strengths derive from multiple agency standards?
- Analyze how key DoD agencies integrate strategy and policy with one another.
 - Consider issues such as jointness, relations between COCOMs, relations between JFCOM and the services and other combatant commanders, integration of efforts in the GWOT.

POC: Col William “Eric” Herr, SAF/IAG, 703-588-8972

Priority: 1

Key terms: integration, strategy, policy, interagency, PDD-56, multinational, joint

3.8 How can the DoD enhance the process of building security relationships/ partner capabilities with other countries?

- How does the US assure allies and friends of its commitment to their security?
- How does the US dissuade future military competition? What are some meaningful historical analogies of dissuasion?
- How can the effectiveness of various security assistance tools such as IMET, Subject Matter Expert Exchange, FMS, multilateral exercises, counterpart visits, etc., be measured?
- What is the capabilities gap in each AOR?
- Building partner capability. What kinds of things in the AF do we need to build partnerships for?
- What is the capability gap in each particular region?

- Focuses on coalition building within a region. Capabilities should take care of themselves.

POC: Col William “Eric” Herr, SAF/IAG, 703-588-8972

Priority: 1

Key terms: security relationships, IMET, Subject Matter Expert Exchange, FMS, multilateral

3.9 Evaluate military lessons-learned programs.

- Examine military’s lessons-learned programs: CALL, A5XL, JSAFTC, JCOA-LL.
- Examine internal Army divisions programs for passing lessons from Iraq.
- How do these programs address/capture the role of culture in military operations?

POC: Dr. Jeff Larsen, SAIC, 719-637-8740 X293 / Dr. Brent Talbot, USAFA, 719-333-9425

Priority: 2

Key terms: lessons learned, culture

3.10 Evaluate the Defense Department’s goal of increasing language proficiency and cultural awareness, and propose alternatives.

- Explore alternatives to language training for incoming personnel, such as recruiting people who are already bi-lingual and/or consider immersion programs.
- Consider cultural aspects; language is a means to understand a culture but not the only means, listening and reading skills are key (e.g., soon Chinese will be the most prevalent language on the internet).
- How do you prioritize it in relation to time away from operational proficiency/skills? What are the incentive structures to encourage learning difficult, but critical, languages such as Arabic, Chinese, etc.? How not to turn it into a “checkbox” structure.
- How do you develop a military language and cultural infrastructure flexible enough to adapt to conflict anywhere on the globe?
- How do you develop a system to bring first generation Americans from other cultures into the military/DOD?
- How is language capability currently assessed and prioritized?
- What is the status of regional studies in academia and what contribution can it make to language proficiency and cultural awareness?
- What languages and cultures should we concentrate on? Are some more critical than others? How should DoD prioritize and incentivize the study of foreign languages and cultures?

POC: Lt Col Fernando Manrique, AF/A5XX, 703-697-9601

Priority: 2

Key terms: language proficiency, cultural awareness, regional studies

3.11 Could regional security arrangements supplement or replace the UN security responsibilities?

- Analyze the evolving role of the UN Security Council.
- What are the security ramifications for the US?
- What ways can regional security arrangements work with UN?

POC: Dr. Brent Talbot, USAFA, 719-333-9425

Priority: 2

Key terms: UN, UN Security Council, bilateral, multilateral

3.12 Examine foreign perceptions of the United States.

- Do foreign perceptions impact US national security, and if so, how?
- Does an opinion-shaping strategy require region or nation-specific modifications?
- Develop a military component for a strategy countering resentment of the United States.
- Assess the US military's influence on foreign perceptions of America.
- What should the military's role be in perception management?

POC: Dr. Thomas Sherlock, USMA, 845-938-2864, DSN 688-2864

Priority: 2

Key terms: foreign perception of America, perception management

3.13 Examine the role of civilian-military teams in stability operations.

- Conduct research on historical and current models for civilian and military integration in stability operations.
- Examine efforts in the past such as CORDS in Vietnam, efforts in the Balkans, and PRTs in Afghanistan and Iraq.
- Assess effectiveness and make recommendations for appropriate ways to organize and operate civilian and military teams.

POC: LTC Richard Lacquement, OSD (Policy), 703-697-3915

Priority: 2

Key terms: stability operations, past efforts, civilian and military teams

3.14 Address exercises and experimentation in stability operations.

- How can stability operations be better incorporated into training, particularly into exercises and experiments?
- Mission readiness exercises: short-term focus
- Concept experimentation
- How to incorporate stability operations activities across the board into simulations.

POC: LTC Richard Lacquement, OSD (Policy), 703-697-3915

Priority: 2

Key terms: exercise and experimentation, mission readiness, simulations, training

3.15 Examine preemptive/preventive war as a declaratory strategy.

- Describe the role of preemptive/preventive war in US strategic documents (e.g., National Security Strategy, National Strategy to Combat Weapons of Mass Destruction, and National Strategy for Combating Terrorism, National Defense Strategy, and National Military Strategy).
- Analyze historical precedents.
- Assess congressional, domestic, and foreign reactions.
- Examine the impact of US policy on the WMD programs of key actors.
- Recommend changes to the policy and strategy.

POC: Dr. Brent Talbot, USAFA/DFMI, 719-333-9425

Priority: 3

Key terms: strategy, preemption, preventive war, strategic communication

3.16 Evaluate and examine the impact of the DOD force transformation strategy and policy.

- Assess the analytic foundations for DOD's force transformation vision.
- Assess DOD's transformation objectives, imperatives, resources and constraints.
- Examine the relative role of the services in force transformation.
- Assess congressional and allied reactions to DOD's transformation vision.
- Assess alternative approaches, their analytic foundations, and their objectives.
- Recommend adjustments in vision, strategy, and policy.

POC: Mr. Forrest Waller, SAIC, 703-415-3335

Priority: 3

Key terms: transformation, strategy, change management

Middle East

3.17 Assess the impact of Operation Iraqi Freedom (OIF) on future US military operations.

- OIF illuminated seams in planning between CENTCOM and EUCOM. Examine ways to minimize operational differences in cases where conflicts affect multiple AORs.
- How did the role of the Joint Staff in operational planning change from the 1990s to OIF?
- What can be done to avoid the large scale insurgency problem experienced after the completion of major combat operations in Operation Iraqi Freedom? Assess post-conflict (Phase IV) planning/interagency cooperation. How responsive was CENTCOM to outside (e.g., State Department, OSD) influence?
- Evaluate the military problems of Iraqi occupation, including issues such as proper equipment, training, and disposition of US forces.
- What long-term professional education programs and oversight processes should be put in place to assist the new Iraqi armed forces in developing civil-military relations to promote democratic governance?

- How can other regional actors help stabilize Iraq?
- Assess possible roles for the United Nations and other international organizations in stabilization operations in Iraq; what can be done to make such a transition more likely?

POC: Dr. Brent Talbot, USAFA/DFMI, 719-333-9425

Priority: 1

Key terms: OIF, CENTCOM, EUCOM, military intervention, civil-military relations, Phase IV operations

3.18 Assess US policy toward Iran including goals, strategy, and the way ahead.

- How might the United States engage Iran, diplomatically, culturally, and economically?
- How can military strategy and public diplomacy interact to affect US relations with Iran?
- How threatening are Iran's WMD development and terrorism sponsorship, and what actions should the United States and international community take to deter, prevent, or preempt the development and possible use of WMD?
- What circumstances might result in US military involvement in Iran; what would be the second and third order effects of US military action?
- How would US policy be impacted by an Israeli first strike on the Iranian nuclear program?

POC: Dr. Ruth Beitler, USMA, 845-938-3999, DSN 688-3999

Priority: 1

Key terms: Iran, WMD, terrorism, public diplomacy

3.19 Assess the changing dynamics of Gulf security.

- How would relations between the Gulf States and Iran change should Iran develop nuclear weapons?
 - Potential spread of weapons of mass destruction
- Would Iran achieving nuclear threshold drive other states to go nuclear?
- Implications for the US? Implications for NPT?
- Assess the potential role of the Gulf Cooperation Council (GCC) as a regional security institution.
- Should US forces have permanent bases in the Gulf region, or should they return to the over-the-horizon basing policy of the pre-1991 Gulf War environment?
- Define the regional implications of the Israeli-Palestinian conflict and assess the capacity of the United States to exercise leverage in the Israeli-Palestinian conflict.
- Would other states follow Iran's nuclear ambitions?

POC: Dr. Brent Talbot, USAFA/DFMI, 719-333-9425

Priority: 1

Key terms: Persian Gulf, Middle East, Gulf Cooperation Council (GCC), US basing, Israeli-Palestinian conflict

Europe

3.20 What is Russia's role in the emerging Eurasian security environment?

- How has Russia reacted to NATO enlargement and to the deployment of NATO forces to new members in Central and Eastern Europe? How will future Russian security policies affect NATO decision making?
- Evaluate Russia's relationship to the European Union.
- Evaluate Russia's relationship to China.
- Analyze Russia's participation in the US-led global war on terrorism.
 - Assess the Russian national security concept in light of the war on terrorism.
 - Is Russia committed to cooperation with the US in the war on terrorism?
 - How has the war in Chechnya influenced Russian-American efforts in the war on terrorism?
- How do Russian domestic politics affect its national security policy?
- Has the US reduced its strategic interest in Russia? Evaluate Russia's relationship with the US.

POC: Dr. Thomas Sherlock, USMA, 845-938-2864, DSN 688-2864

Priority: 2

Key terms: Russia, NATO, EU, NATO enlargement, US security interests, terrorism, Chechnya

3.21 Analyze EU efforts to develop an autonomous defense capability and its long-term effects on NATO and US engagement in Europe.

- Assess the likely roles and importance of the EU security and defense policy (ESDP).
- Identify and evaluate the command and control structure established for EU military operations. To what extent is it compatible with US and NATO structures?
- Discuss European military capabilities (e.g., inter-theater airlift) and the effect of EU defense efforts on US/Europe military interoperability.

POC: Dr Marybeth Peterson Ulrich, US Army War College, 717-245-3272, DSN 242-3272

Priority: 2

Key terms: ESDP, NATO, European Union, interoperability, command and control

3.22 What is the developing security situation in Southeast Europe?

- Evaluate probable end states for Kosovo and identify possible policies and action that could be taken by the United States, its allies, and the greater international community to prevent a reoccurrence of large-scale violence.
- Provide an update on state-building efforts in Macedonia and Bosnia, to include an assessment of the effectiveness of EU peacekeeping in Bosnia.
- What are the prospects and implications of Croatia joining the European Union?
- Identify the progress made towards integrating Serbia-Montenegro into European regional organizations.

POC: Dr. Charles Krupnick, US Army War College, 717-245-3582

Priority: 3

Key terms: Balkans, border issues, Croatia, Kosovo, Macedonia, Serbia

3.23 What will NATO's role be in future US security strategy?

- Evaluate the likelihood of a more robust NATO global role following NATO's stabilization force in Afghanistan.
- Assess NATO's effectiveness in fostering defense reform and military capabilities improvement in its new and aspiring members and Partnership for Peace partners.
- How have transatlantic relations changed as a result of disputes among NATO allies over the US-led operation in Iraq? Has the war in Iraq strengthened European interest in developing its own defense capability and downgrading commitments to NATO?
- Is there a future for US nuclear forces in NATO?
- What are the impacts on NATO of US basing realignment?

POC: Capt Kevin Dowling, USN, US Army War College, 717-245-3574

Priority: 3

Key terms: NATO, ESDP, NATO enlargement, security and defense activity, US security interests, European political trends, Partnership for Peace, PfP

Asia

3.24 Assess the global implications of China's national security strategy.

- Assess domestic sources of China's national security strategy.
- Evaluate China's security priorities by region, level of commitment, and impact upon US security interests.
- Examine China's approach to the revolution in military affairs and assess China's defense priorities in key areas associated with systems warfare – precision strike, aero-space warfare, information warfare, C4ISR, special forces, and sea control and sea denial.
- To what degree can US security policy shape China's in a positive manner?
- Does the Taiwan issue affect China's global power position?
- Examine the strategic relationship between US and Chinese nuclear forces.
- How does China's rise affect US relations with Japan? Korea? Australia? India?

POC: Dr. Jacob W. Kipp, FMSO, 913-684-5958

Priority: 1

Key terms: China, revolution in military affairs

3.25 Evaluate the role of radical Islam in South Asia, particularly Pakistan. Explore the impact of radical Islam on democracy and stability in the region. (See also topic 3.6)

- Assess the socioeconomic sources of radical Islam in the region.
- To what extent is Pakistan moving toward better relations with India by revising and softening the depiction of India in its education system?
- What is the ability of the secular Pakistani government to maintain power?

POC: Dr. Thomas Sherlock, USMA, 845-938-2864

Priority: 1

Key terms: Islam, South Asia, Pakistan, India

3.26 Assess the changing security dynamics of Central Asia.

- What are the areas of potential conflict and cooperation between Russia, China, Iran, and the United States in Central Asia?
- What are the potential security implications resulting from weak states in this region and how will these developments affect US national security?
- How great is the terrorist threat and its potential to incite regional instability?
- Discuss trends in the distribution of regional power among the United States, China, Russia, and Iran. Which country enjoys the strongest influence over the individual governments in the region? What factors account for this influence? How is this influence likely to change over the next 5 to 10 years?
- What is the impact of recent political revolutions in Central Asia?
- What is the impact of US basing in the region?
- What is the enduring effect on Central Asia of OEF?

POC: Dr. Thomas Sherlock, USMA, 845-938-2864, DSN 688-2864

Priority: 1

Key terms: Central Asia, Afghanistan, Uzbekistan, Tajikistan, Turkmenistan, Kazakhstan, Kyrgyzstan, Russia, terrorism, China, US basing

3.27 Discuss the impact of historical and cultural strains in Sino-Japanese relations on the future security environment.

- How important are historical and cultural issues to preventing closer relations between Japan and China?
- What movement, if any, has been made on either side to move toward reconciliation through a revision of historical narratives?
- What are the demographic elements of this issue?
- What is the role of Chinese economic power and nationalism in Sino-Japanese relations?

POC: Dr. Thomas Sherlock, USMA, 845-938-2864, DSN 688-2864

Priority: 3

Key terms: China, Japan

Western Hemisphere

3.28 Assess security challenges in the region and how they can be addressed by constructive security cooperation.

- How can the United States best encourage security cooperation among Organization of American States (OAS) member states? How do NORTHCOM and SOUTHCOM adequately address these security challenges?

- What role, if any, does NORTHCOM-Mexican military cooperation have in addressing homeland defense and homeland security issues? Consider a broad definition of security encompassing drug trafficking, human trafficking, armed gangs, insurgency, weapons proliferation, in addition to traditional security concerns.
- How should US regional strategy address the leftward tilt in regional governments?
- Comment on the role the OAS and other regional organizations can play in addressing regional security challenges.
- What role do Hugo Chavez phenomenon and indigenous movements create regional challenges?
- Do congressional restrictions such as the article 98 (ICC) prevent the US from pursuing cooperative efforts with nations in the region?

POC: Dr. Jacob W. Kipp, FMSO, 913-684-5958

Priority: 2

Key terms: OAS, NORTHCOM, SOUTHCOM, Central America, Mexico

Africa

3.29 Assess the changing security dynamics in Africa.

- What are the implications for energy sources in West Africa, both for regional stability and US interests?
- What role can the African Union and other regional organizations play in African security and development initiatives?
- How can the US shape efforts in and around the Horn of Africa to assist in the war on terrorism?
- Are sub-regional organizations, such as ECOWAS, a more useful vehicle for addressing African security issues?
- How can environmental security issues, such as disaster response, be used to promote military support to civil authority and legitimacy in high terrorist threat areas?

POC: Dr. James Forest, USMA, 845-938-6135, DSN 688-7786

Priority: 2

Key terms: African Union, energy, oil, West Africa, Horn of Africa, ECOWAS, terrorism, environmental security

3.30 Discuss the security implications of the HIV/AIDS epidemic in Africa.

- Which states are most affected by the pandemic?
- What is the role of the United States and other international actors?
- How would it affect a US military intervention in the region?

POC: Dr. Thomas Sherlock, USMA, 845-938-2864, DSN 688-2864

Priority: 3

Key terms: HIV, AIDS, Africa, pandemic

Environment and Security Issues

Note: Many of the broader environmental, environmental health, and sustainability topics or questions presented below will need to be more fully focused and may be developed as case studies of specific nation states or geographic regions as selected by the researcher. Policy gaps and potential solutions should be identified.

3.31 Identify the strategic implications to military operations of existing or future international environmental conventions or more regionalized agreements/regimes.

- Explore in detail a specific multi-lateral environmental agreement. For example:
 - Protection of the marine environment, e.g., London Convention;
 - Regional regulation of ocean dumping , e.g., North East Atlantic regimes;
 - Protection of the ozone layer, e.g., Montreal Protocol;
 - Transboundary movement of hazardous wastes, e.g., Basel Convention;
 - Climate change and greenhouse gases, e.g., Kyoto Protocol.
 - Control of invasive species, e.g. Plant Protection Convention [note: US Executive Order 13112; issues with military vehicle wash downs]
- Examine the military, political, and legal implications posed by military systems required to preserve US strategic options, e.g., continued use of active military sonar; continued critical use of halons by the US military in the European Union.
- What are the implications for the US reputation for non-conformance with multi-lateral environmental agreements, to include relations with partner militaries?
- What are the constraints these agreements place on the regional COCOMs?
- What policies should be implemented to preserve US strategic options?

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191

Priority: 1

Key terms: international treaties, climate change, sonar, hazardous wastes, environmental, agreements

3.32 What is the strategic impact of national or regional environmental regulatory frameworks on the future stationing of US forces overseas?

- Review existing and planned strategic environmental (framework) proposals and compare with those proposed within the US, for example, the EU, Korea, and Guam.
- Review existing emphasis and adherence by other nations with the principles of sustainable development and compare with those for the US
- How will developing national (e.g., Japanese) or regional (e.g., EU) defense competency affect US operations and training?
- How are other foreign militaries responding to this potential issue?
- Examine how accession by South East European nations to the EU may affect future US operations and training.
- Explore the associated legal framework and funding considerations associated with restationing of US forces overseas.
- Focus on a single regulatory issue to examine the impact on future US and partner military operations, e.g., critical use of halons in weapon systems in EU.

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191; Mr. Michael Cain, AEPI, 703-604-2301, DSN 664-2301; Dr. Kent Butts, US Army War College, 717-245-3728

Priority: 1

Key terms: environmental law, environmental regulations, EU, European Union

3.33 Examine the strategic implications to the US military of increasingly restrictive chemical production, importation, and usage by the European Union.

- Explore current and proposed legislation related to chemical restriction in the EU, e.g., REACH (Registration, Evaluation, and Authorization and Restrictions of Chemicals).
- How are major US chemical manufacturers and governmental agencies reacting to EU scrutiny of new chemical substances and persistent organic pollutants (POPs) and what are the implications for future US and EU relations?
- Examine how the US military might best apply green chemistry and green procurement principles and examine the resulting benefits, e.g., employing less toxic chemicals and reduced costs associated with hazardous waste management.
- What is the potential impact on future military readiness, training, and operations?
- How will current and planned restrictions of increasingly restrictive chemical production impact development and procurement of US weapon systems?

POC: Mr. David Sheets and Mr. Steven Hearne, AEPI, 703-604-2310, DSN 664-2310 and 703-602-0191, DSN 332-0191, respectively.

Priority: 1

Key terms: chemicals, European Union, EU, regulated substances, REACH, persistent organic pollutants, POPs, green chemistry, green procurement, R&D, acquisition, weapons systems, environment

3.34 How might the US military operational capability be strengthened and the environmental footprint and logistics tail reduced through more sustainable practices?

- Examine how the US military may deploy more rapidly and transition more seamlessly across the full spectrum of operations by incorporating sustainability within its test, training, and mission requirements.
- Examine how the US military can increase mobility with more sustainable practices, e.g., use of more self-sufficient forces and self-contained systems.
- Assess existing joint doctrine, applicable national and defense security strategies, and other policies and terminology to support a new paradigm of sustainability.
- Examine how the concept of sustainability supports the ongoing transformation of US military forces, focusing on increased modularity and survivability, reduced dependency on water and fuel, renewable energy systems, and waste reduction?

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191

Priority: 1

Key terms: sustainability, national security, doctrine, strategy, operational capability, sustainable practices, environmental footprint

3.35 How should Combatant Commanders' environmental guidance to operational plans be designed to better promote theater readiness and war fighting capabilities?

- Evaluate and compare environmental guidance, e.g., Environmental Annex Ls, for applicable operations (e.g., Iraq, Kosovo) in light of future stability operations.
- Examine the relationship between Annex L and other applicable annexes, e.g., health and safety, legal, intelligence, elsewhere in the body of the OPORD.
- Review subordinate command directives, FRAGOs, and OPORDs (e.g., Service component), to ensure objectives of Annex L are executed.
- Assess if hazardous materials and resulting wastes being handled IAW Annex L, doctrine, and Service regulations by the applicable logistics function(s).
- Suggest changes to Joint Publication or other policy/guidance to improve outcomes, or justify why changes cannot be achieved or aren't needed.
- Assess USDA vehicle re-entry requirements, e.g., control of invasive species.
- Assess what Standard Operating Procedures (SOPs) are in place to support environmental operations in a contingency operation.
- Examine if US military "trains as it fights", e.g., examine how environmental training practices at home station reflect what troops will experience in the field.
- Examine the potential implications of not complying with Annex L, and other subordinate environmental guidance, policies, doctrine, SOPs, e.g., what are the implications for the US reputation regionally or internationally?

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191

Priority: 1

Key terms: environmental guidance, environmental policy, Annex L, stability and reconstruction activities, environment, OPORD, operational plans

3.36 What are the environmental security issues that may create the underlying conditions for terrorism?

- Which of the underlying factors that foster terrorism are environmental in nature, and how influential are these factors, e.g., are they direct or indirect?
- How can the US security cooperation plans of the COCOMs be used to address these underlying conditions, e.g., identify the role(s) for the US military?
- How can COCOMs use environmental security issues to help host nation militaries build their legitimacy and reduce potential terrorist sanctuaries?
- How do environmental factors contribute to failed and failing states?

POC: Dr. Kent Butts, US Army War College, 717-245-3728

Priority: 1

Key terms: terrorism, environmental security, security cooperation, sustainability, failed and failing states

3.37 How do natural resource dependencies influence US national security interests?

- Examine alternate strategies to reduce US dependency on foreign oil and implications to US energy strategy and implications to the US military.
- Explore security implications of dependence on the open market for strategic or critical materials, e.g., China, India.

- Examine regional dependencies (e.g., European Union and Russian energy relationships, or US-Venezuelan energy relationships).
- Under what situations, and what military options are available and should be used to guarantee the supply of strategic resources (Sea Lines of Communication, protecting critical infrastructure, etc.)?
- Explore how natural resource issues might promote terrorism and insurgencies?
- Examine the role of new strategic minerals to US national security.

POC: Dr. Kent Butts, US Army War College, 717-245-3728

Priority: 1

Key terms: water war, natural resources, strategic minerals, strategic materials, defense industrial base, regional stability, resource wars, environment, environmental security, water security, scarcity

3.38 Assess the strategic implications of the Aarhus Convention (establishing rights for environmental information, public participation, and access to justice) for US readiness and training in Europe.

- Examine the political and social elements that led to this convention.
- Review requirements under this convention and identify their implications for current and future US and European military operations.
- How can the US use the Aarhus convention to improve its relations with its EU allies?
- Compare requirements under Aarhus with current US requirements.
- Explore other emerging public participation requirements in other theaters.
- Provide policy recommendations.

POC: Ms. Karen Baker, AEPI, 703-604-2300, DSN 664-2300; Mr. Michael Cain, AEPI, 703-604-2301, DSN 664-2301

Priority: 2

Key terms: public involvement, public participation, access to environmental information, environmental justice, environmental decision making, Aarhus Convention

3.39 Examine the inter-relationships between national or regional security, stability, and long-term sustainability.

- Can sustainable development be maintained without security, or vice-versa?
- How does sustainability impact stability, or vice-versa?
- What current methodologies best describe these relationships?
- What prioritization are other militaries (e.g., European) giving these relationships?

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191

Priority: 2

Key terms: sustainability, national security, triple bottom line of sustainability, security, innovative technology, sustainable practices, well being, sustainability ethic, environment

3.40 Examine how the US military can best implement the principles of sustainability?

- How can a sustainability-based strategy improve and strengthen military capabilities?
- How can a sustainability ethic be better fostered within the military?
- How might current and future training, testing, and mission requirements be improved through application of the principles of sustainability?
- How might the principles of sustainability drive innovative technology to better anticipate future military needs?
- How might impacts and total ownership cost (e.g., military systems, facilities and operations) be minimized through application of the principles of sustainability?
- How might the well being of the military and civilian communities be enhanced through application of the principles of sustainability?

POC: Mr. Steven Hearne and Karen Baker AEPI, 703-602-0191, DSN 332-0191 and 703-604-2300, DSN 664-2300, respectively

Priority: 2

Key terms: sustainability, national security, triple bottom line [of sustainability], security, innovative technology, sustainable practices, well being, sustainability ethic, environment

3.41 Examine the relationship between International Governmental Organizations (IGOs) and Non-Governmental Organizations (NGOs) and the US military in addressing environmental and health issues in stability operations.

- What is the appropriate role of these institutions across the various phases of a military operation, e.g., from planning, deployments, execution of the operations, transition, and reconstruction?
- Explore the transition of responsibilities from the US military to IGOs and NGOs.
- How has the US military interacted with these organizations in the past?
- How might overall effectiveness and coordination between stakeholders be improved, e.g., what is currently being done or planned to improve coordination?

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191.

Priority: 2

Key terms: international Governmental Organization, IGO, Non-Governmental Organization, NGO, contingency operation, CONOP, planning, deployment, redeployment, post-conflict and reconstruction, environment

3.42 Examine the effectiveness of current intelligence systems to address environmental and related health considerations in support of military operations.

- How have the combatant commands employed environmental and environmental health intelligence in recent operations?
- How effective has communication been in planning for contingency operations between the intelligence, engineering, medical, and legal communities?
- Is the current system for tasking the intelligence community to provide this environmental and environmental health information successful?
- How effective has the application of intelligence been in locating base camps and protecting deployed forces?

- What are major open US and foreign sources of environmental intelligence that are currently available for use by military communities?
- What is the role of the US in making environmental and related health information more available to other allied nations?

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191.

Priority: 2

Key terms: environmental intelligence, environmental health, open sources

3.43 Examine how the US military conducts environmental planning for bilateral and multilateral military exercises overseas.

- Evaluate and compare environmental guidance developed for recent exercises with existing joint doctrine and Service regulations and identify deficiencies.
- Compare and contrast Service component approaches to environmental planning for overseas exercises.
- Examine the relationship between environmental guidance provided in exercise planning and orders with that for health and safety, legal, intelligence, etc.
- Assess if hazardous materials and wastes are being appropriately handled.
- Suggest changes to Joint Publication or other policy/guidance to improve outcomes, or justify why changes cannot be achieved or aren't needed.
- Assess what Standard Operating Procedures (SOPs) are in place to support environmental operations in military exercises overseas.
- Assess USDA vehicle re-entry requirements, e.g., control of invasive species.
- Examine if US military "trains as it fights", e.g., examine how environmental training practices at home station are being tested during overseas exercises.
- Examine the potential implications of not complying with established COCOM and other subordinate environmental guidance, policies, doctrine, SOPs, e.g., what are the implications for the US reputation regionally or internationally?

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191

Priority: 2

Key terms: environmental guidance, overseas exercises, training, bilateral and multilateral exercises, Joint Publications

3.44 Examine how regional environmental issues might be used to promote the Combatant Commander Theater Security Cooperation Programs (TSCP).

- Examine how US military environmental engagement activities may support stability operations, and assist in post-conflict and reconstructions activities.
- How can environmental issues or challenges be used to promote access, interoperability, and influence communication, cooperation and regional stability, (e.g., review past and ongoing bi- and multi-lateral programs and initiatives)?
- Examine the role of environmental issues in eroding governmental legitimacy and promoting terrorism and how it can best be addressed within the TSCP.
- Explore concepts for using environmental security to support the TSCP.

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191 and Dr. Kent Butts, AEPI, 717-245-3728

Priority: 2

Key terms: theater security cooperation programs, TSCP, Confidence Building Measures, multinational cooperation, terrorism, environmental cooperation

3.45 How might addressing environmental security issues and sustainable practices be influential in discouraging the conditions that encourage terrorism?

- Examine the impact of US post-conflict and reconstruction assistance on local, national, and regional stability.
- Examine how the level of insurgency may be impacted by increased attention to environmental concerns, and the influence of these factors, e.g., direct or indirect?
- How might US military doctrine and operational planning be modified to better address the factors that may encourage increased insurgency and terrorism?
- What are the potential resource implications to the US of addressing environmental actions early on in contingency planning?

POC: Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191

Priority: 2

Key terms: terrorism, environmental security, security cooperation, insurgency, operational plans, post-conflict and reconstruction, stability

3.46 Assess the environmental and health concerns associated with the military and/or terrorist use of nanotechnology.

- Examine the potential consequences of nanotechnology product dispersal from military operations and accidents.
- How could terrorist organizations use nanotechnology to threaten the US?
- Forecast concerns that might arise, supported by science or supposition.
- What countries appear active in nanotechnology research and which are unusually quiet about their research?
- What is the focus of other countries' research and what are the associated benefits to military application?

POC: Mr. David Sheets, AEPI, 703-604-2310, DSN 664-2310 and Mr. Michael Cain, AEPI, 703-604-2301, DSN 664-2301

Priority: 2

Key terms: nanotechnology, environmental health, dispersal, nanotechnology research, terrorism, environment

3.47 Examine the relationship between water, regional conflict, and US national security interests and the potential role of the military in helping to diffuse tensions.

- How can water resources be used to promote multilateral cooperation and/or regional confidence building measures (e.g., Israeli and Palestinian cooperation)?
- How may new local, national, and multi-lateral institutions be created or improved to improve sustainable water management ecosystems?

- How can the military better participate through existing or new organizational frameworks?
- What efforts are underway to better determine the true valuation of water as a critical resource?
- What is the impact of the US moving away from a high water availability nation to an average water availability nation over the next decade?
- What existing or new early warning systems are required to better monitor water scarcity and related impacts, e.g., to food security?.
- How might terrorists target water resources?

POC: Mr. Steven Hearne AEPI, 703-602-0191, DSN 332-0191 and Dr. Kent Butts, US Army War College, 717-245-3728

Priority: 2

Key terms: water rights, water availability, water quality, resource issues, water conflict, environmental security, sustainability, sustainable, human security, terrorism, environment

3.48 What are the implications of demographic changes on US national security interests?

- Examine the impact of cross-border population movement (e.g., legal, immigration, illegal immigration, uncontrolled population movement).
- Examine the relationship between demographic pressures and the ability of new democratic regimes to maintain their legitimacy.
- Examine the impacts from soaring border populations resulting from existing and proposed trade agreements (e.g., NAFTA and the maquiladores border plants).
- Examine the demographic roots of terrorism.
- Assess the security implications of [rapid] urbanization and population migration.
- Examine demographic changes in key powers and weak states and their effect on US national security.
- Characterize the relationship between disease pandemics and demographics.

POC: Kent Butts, AEPI, 717-245-3728, and Mr. Steven Hearne, AEPI, 703-602-0191, DSN 332-0191

Priority: 2

Key terms: population movement, demographics, border issues, trafficking, migration, urbanization, disease, terrorism, pandemic, environment

3.49 Assess the role of emerging/resurgent diseases as a challenge to force protection efforts and as a generator of military operations.

- Identify potential scenarios that threaten US forces at home and abroad.
- Should military forces carry out coalition or peacekeeping operations in high threat regions?
- Explore the relationship of encroachment to increased incidence of infectious disease.
- Examine the role and organization of the military and its relationship with other allied partners and international stakeholders in managing threats posed from diseases?
- Should military forces be involved in controlling and eliminating disease?

POC: Mr. Steve Hearne, AEPI, 703-602-0191, DSN 332-0191

Priority: 2

Key terms: disease, epidemic, AIDS, Africa, South Asia, SARS, encroachment, environmental health, force protection, H5N1

3.50 What are the environmental factors in urban warfare?

- How could the provision or denial of environmental resources be used to influence mission success?
- Assess provisions of fresh water, sanitation services, electrical power, shelter, and transportation.
- Assess readiness of support services to locals and non-combatants.
- Explore how the environment might be used as a weapon and the resulting impacts on US military as occupying forces and to local population.
- Identify the information requirements to develop a picture of the operational environment.
- Use Balkans, Afghanistan, and Iraq for lessons learned.

POC: Mr. John Fittipaldi, AEPI, 703-604-2307, DSN 664-2307

Priority: 3

Key terms: environmental security, ES, urban warfare, siege, expeditionary forces

4. AIR AND SPACE ISSUES AND PLANNING

[Related topics: 1.9, 1.10, 1.15, 1.30, 1.31, 5.13, 5.31]

4.1 Streamlining the Acquisition Process

- Suggest ideas and alternatives that the USAF and DOD can do to acquire capabilities in strategically relevant periods of time.
- What steps can the Air Force take to help streamline the DOD's acquisition process?
- What are the tradeoffs involved in speeding up the acquisition process?
- What degree of freedom does the Air Force have due to congressional oversight?
- Discuss case studies of system acquisitions providing lessons learned.
- What are the affects of the joint requirements process on acquisitions, particularly the joint capabilities integration development system (JCIDS)?
- Compare and contrast merits and demerits of long-term acquisition programs versus shorter-term incremental/spiral programs?
- What are the relative advantages and disadvantages between incremental and spiral technology development?
- Discuss the advantages and disadvantages of concurrent versus serial development efforts, for example conducting integrated F-35 Task Force Operational Testing & Developmental testing together.
- How can Air Force identify the scale of technological advance?
- Today, everything is built to satisfy requirements. Discuss how one acquires advanced technological capabilities when one may not even know one has a need or requirement.
- The Air Force CRRA process is one mechanism to define capabilities shortfalls, are there others?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 1

Key Terms: acquisitions, space systems, congressional oversight, JCIDS, spiral development, current development, serial development

4.2 What Is The Role of Air Force Doctrine Today?

- Do we need Air Force doctrine in lieu of Joint doctrine?
- If Air Force doctrine is to be subsumed by Joint doctrine, how should the Air Force approach the development of Joint doctrine?
- What does the recent Doctrine Center reorganization mean to the importance the Air Force places on the role of doctrine?
- Discuss the Air Force view of doctrine in comparison to the views of the Army and Navy.
- If doctrine is used to validate budget priorities, what is the effect on funding if Air Force doctrine is retired in favor of Joint doctrine?

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: doctrine, Air Force Doctrine, Joint Doctrine, funding

4.3 Directed Energy (DE)

- What are directed energy's policy implications (offensive and defensive) on the Air Force's capabilities?
- How do we protect U.S. and allied forces from directed energy attacks?
- Are there directed energy technologies emerging that could impact stealth technology?
- Can the integration of nuclear capabilities into international law serve as a case study for the integration of directed energy?
- Discuss/explore the moral implications of the use of DE in lethal and/or less than lethal force applications.
- How does the Air Force conduct BDA/Combat Assessment of DE attack?
- What is the concept of operations against a country with an integrated DE air defense system?

POC: Maj Dave Kirkendall, AF/A5XC, 703-696-6131; Suhaib Abdali, AF/A8XC, 703-692-6640

Priority: 1

Key Terms: directed energy, force protection, nuclear capabilities, international law

4.4 Future of Airlift

- What is the appropriate mix of transport aircraft to allow the Air Force to meet its mission requirements?
 - What is the effect of joint cargo aircraft?
- How will changes in the airline industry (e.g., bankruptcies, shift to regional jets, foreign ownership) affect the CRAF?
- Are there other means to achieve airlift capabilities, for example dirigibles?

POC: Maj Chris Byrom, U.S. Department of State, ISN/SPO, 202-647-7907

Priority: 1

Key Terms: transportation aircraft, airlift, joint cargo aircraft, domestic airline industry

4.5 Nuclear Weapons

- What is the role of US nuclear weapons?
- What is the affect of personnel retirement on the US nuclear arsenal?
- Can US meet NATO nuclear mission needs from CONUS?
- What is the nexus between missile defense and the nuclear posture?
- Does limited missile defense affect the ability of the US and Russia to meet their NPT Article 6 obligations?
- Explore the appropriate division of labor between the agencies responsible for maintaining US nuclear forces.
- Has the nuclear infrastructure been properly maintained?
- Complete a cost-benefit analysis of nuclear decommissioning.

POC: Tim Miller, SAIC, 703-415-3338; Dr. Jeff Larsen, SAIC, 719-637-8740, ext. 293
Priority: 1
Key Terms: nuclear weapons, NATO, nuclear arsenal, missile defense, nuclear decommissioning

4.6 Emerging Space Operations

- Given the rate of and potential for technological advancement in the commercial space sector, discuss the potential for adversaries to be able to develop affordable global strike capabilities.
- Persistent surveillance:
 - Discuss the potential for technological breakthroughs that might be useful in enabling longer staring space surveillance systems.
 - What other new technologies might improve this capability?
- Explore and discuss “flagging rights” for spacecraft and ship:
 - Case study between ships and spacecraft.

POC: POC: Maj Chris Byrom, U.S. Department of State, ISN/SPO, 202-647-7907
Priority: 1
Key Terms: global strike, space, persistence surveillance, flagging rights, ships

4.7 Myths versus Realities of Responsive Space Lift

- What are the myths and realities of responsiveness in space lift?
- Suggest ways to overcome obstacles.
- Discuss roles of the various military, non-military, and commercial entities in a responsive space lift architecture.
 - Who sets standards, suppliers, or customers?
 - Who establishes requirements for responsiveness in space lift?
- What are the expectations of the user/consumer?
 - What does AFSPC expect to get out of it?
 - What does the Combatant Command expect to get out of it?

POC: Maj Dan McCutcheon, AF/A3SSO, 703-695-6900
Priority: 1
Key Terms: space lift, standards, expectations, AFSPC, Combatant Command

4.8 Irregular Warfare

- What is the Air Force’s role in irregular warfare?
- What capabilities does the Air Force need to win an irregular war?
- Do current systems meet the Air Force needs?
- What would an Air Force CONOPS for irregular warfare look like?
- Discuss the pros and cons of the Air Force getting more involved in HUMINT to fight an irregular war.
 - Should AF HUMINT activities be confined to the strategic level or should/could they be expanded to the tactical level?
 - Conduct a case study of past Air Force HUMINT activities such as Civic Action Squadrons during the Vietnam War.

POC: Mr. George Monroe, SAIC, AF/A8XZ, 703-692-6615

Priority: 1

Key Terms: Irregular Warfare, air base security, foreign internal defense, COIN

4.9 Training for Irregular Warfare

- How can the Air Force help further US objectives without an irregular war fighting capability?
- What type of training is needed to effectively conduct irregular warfare?
 - From the individual Airman to the Base Commander.
- Recently the Army asked the Air Force to take over air base security “outside the fence.”
 - What new war skills might the Air Force expect to take on, for example.
 - What changes in security forces composition and activities would the Air Force need to achieve this goal?

POC: Mr. George Monroe, SAIC, AF/A8XZ, 703-692-6615

Priority: 1

Key Terms: Irregular Warfare, air base security, foreign internal defense, COIN

4.10 Foreign Internal Defense (FID)

- In light of recent events in post-war Afghanistan and Iraq, how should the Air Force best conduct Aviation FID activities?
 - What lessons can be learned from past operations in Southeast Asia concerning FID and COIN?
 - What is the role for AFSOC and the rest of the Air Force in FID?

POC: Mr. George Monroe, SAIC, AF/A8XZ, 703-692-6615

Priority: 1

Key Terms: irregular warfare, air base security, foreign internal defense, COIN

4.11 Counter-CBRNE

- Are there ways to improve the ability to F2T2 Weapons of Mass Destruction?
- How do we address the issue of contaminated aircraft, and how will this affect basing agreements with other countries?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 1

Key Terms: F2T2, WMD, contaminated aircraft

4.12 Air Force Smart Ops 21

- What processes does the Air Force need to develop or improve to meet the objectives in AFSO-21?
- Do Air Force Smart Ops 21 and Future Force Development need to be augmented to get people to think in different terms?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: Air Force Smart Ops 21, Future Force Development

4.13 How can the Air Force best organize, train, and equip for UAVs, as well as control and operate them?

- Review and critique the UAV Strategic Vision to determine if it meets the Air Force's strategic needs and develop ways to implement suggestions.
- Define what a UAV is. Should they be defined by range (strategic v. tactical), by payload, or some other way?
- What would a UAV look like that was built for long-range strike or persistent strike?
- How does the military control and deconflict this ever-growing number of aircraft?
- How does the military handle the bandwidth needed for aircraft control and sensor exploitation?
- What are the optimal capabilities that can be put into a UAV?
- What can a UAV do that a piloted aircraft cannot?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 1

Key Terms: UAV Strategic Vision, UAV

4.14 Escalation management with non-state actors

- Identify ways to deter and dissuade non-state actors.

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-7495

Priority: 1

Key Terms: escalation management, non-state actors, terrorists

4.15 What are the factors to consider when setting up an organization to handle post-conflict stability operations and reconstruction?

- What is the best way to make this flexible and adaptable to the situation on the ground?
- What is the Air Force role in this?
- What is DOD's role?
- What is the relationship between the State Department and DOD? Which has the lead?
- Review the latest directives and guidance on such operations and identify the requirements from them that DOD and the Air Force are expected to meet.
- What should be the role of AF reserve component forces in stability operations?
- Should there be a standing Joint Task Force with the State Department in Washington, DC for these operations?
- What is the US and DOD policy for dealing with "ungoverned spaces" around the world?

POC: Lt Col DeMaso, AF/A35Z, 703-614-8395, DSN 224-8395

Priority: 1

Key Terms: OIF, OEF, MOOTW, SASO

4.16 Examine the stresses of high OPSTEMPO on the Air Force Reserve and Air National Guard.

- What roles are these forces playing and what roles should they be playing?
- How does this vary by career field?
- What factors impact reserve component forces?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: tempo, retention, recruiting, Guard, Reserve

4.17 Can integrating active and reserve component units improve operational efficiency?

- What are optimal active component/reserve component ratios for integrated units (including fighter, bomber, strategic airlift, space operations)?
- What tasks are best suited for Guard and Reserve forces?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: tempo, organization, Guard, Reserve

4.18 How can the Air Force logistically support the Army and Marine Corps distributed and re-supply operations?

- What are the relative costs of the current hub-and-spoke logistics system vice a precision airdrop capability?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: logistics, joint operations, OIF, OEF, mobility, airlift

4.19 What doctrine, equipment, organizational structures, and tactics, techniques, and procedures are needed to effectively support ground-based special operations forces across the wide range of contingency operations?

- How might establishing a UAV squadron meet this need?
- What modifications are needed to AFDD 2-7 to reflect USSOCOM's role as a supported combatant command?
- What capabilities are needed to provide cover/protection to ground-based special operations forces inserted well behind "enemy lines"?
- What organizational changes are needed for the air operations center to act in support of SOF?
- Write unclassified case studies of recent campaigns.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: special operations forces, doctrine, contingency operations, joint operations, special ops, case studies, lessons learned, USSOCOM, AFSOC, SOF, CCT, PJ, AOC

4.20 Examine the domestic use of military assets.

- How will various military assets (ISR, C2, mobility) be used domestically in homeland defense and crisis management and what is NORTHCOM's role? How will these assets be tasked?
- What is the role of the Air National Guard in NORTHCOM homeland defense missions and how does it compare with their Title 32 responsibilities to their states?
- What role does NORTHCOM have in continuity of government and continuity of operations? What might the Air Force be asked to do?
- Are there service responsibilities that might fall under NORTHCOM's mission? (ex. UAVs, high-altitude airships, ISR)
- How can space assets be used to support NORTHCOM's domestic mission?
- How does the Coast Guard contribute to NORTHCOM's mission?
- How can DOD assist the Department of Homeland Security with border and transportation security, through the Border Patrol and Customs?

POC: Mr. Bill Powell, USNC J33O, 719-554-7211/DSN 692-7211

Priority: 1

Key Terms: NORTHCOM, homeland defense, homeland security, Air National Guard, total force, interagency, GWOT, war on terrorism, legal

4.21 What role does air and space power have in the urban operation environment?

- What capabilities exist within the USAF that make it uniquely qualified to project air and space power in the urban environment?
- Are the other services better suited to project air and space power within the urban environment?
- Would the 'operationalizing' of unmanned combat aerial systems improve the USAF's capabilities to apply air and space power in the urban environment?
- Does USAF doctrine adequately address the application of air and space power in the urban environment?
- What is the US policy/doctrine with regard to the autonomous application of air and space power in the urban environment?
- What effect will emerging technologies (e.g., directed energy capabilities, persistent area dominance munitions, micro-UAVs, unattended sensors) have on the USAF's application of air and space power in the urban environment?
- Write unclassified lessons learned from operations in Afghanistan and Iraq.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: urban operations, joint operations, UCAV, doctrine

4.22 How would expansion of UAV assets and other network-centric systems affect spectrum allocation?

- Examine spectrum allocation for UAVs in a theater.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: UAV, UCAV, bandwidth, transformation, AOC

4.23 Examine the development of Regional Affairs Specialists (RAS) and the skills they require.

- How can RASs be tasked and assigned?
 - How should their skills and abilities be highlighted to make them more visible?
- How can RASs contribute to Predictive Battlespace Awareness in terms of cultural knowledge and understanding?
- What capabilities can RASs offer to a commander?
- What skills do RASs need to be most effective?
- How might they contribute to HUMINT?
- Should there be a dedicated career field for RASs? What is an appropriate career development path for these personnel? How can their RAS skills be maintained if it is a secondary duty?
- How could RASs be used to provide pre-deployment cultural training?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: FAO, HUMINT, personnel, common operational picture, COP, IPB, intelligence preparation of the battlespace

4.24 What should be the USAF role in NORTHCOM?

- What is the role of the Air Force District of Washington in National Capital Region defense?
- What authorities and policies exist to allow Air Force assets to be tasked?
- How should the Air Force, NORTHCOM, and the Department of Homeland Security interact?
- What USAF assets should be assigned to NORTHCOM?
- How can NORTHCOM best integrate with and support civilian agencies?
- What should be Guard and Reserve roles in NORTHCOM?
- How does First Air Force, as a component of NORAD, relate to NORTHCOM?

POC: Mr. Bob Boggs, NC J5, 719-554-1475

Priority: 1

Key Terms: ISR, mobility assets, Air National Guard, Reserves, total force, force protection, BMD, NMD, JFHQ-NCR

4.25 What are the implications of space situational awareness deficiencies for space control?

- Should there be a standing plan in response to an attack on US space assets?
- What policies, concepts of operations, and technologies are needed to improve space situational awareness? How can these be diffused across all space sectors?
- How can we tell if a satellite has been attacked? How will the source of the attack be attributed?
- What technologies are available or projected for adversaries and how might they use them against US assets?
- What are the consequences of the loss of space capabilities to the terrestrial warfighter?
- What could current capabilities provide in terms of responses?
- How should the current state of space situational awareness be advanced to better assist operational forces?
- When do/should the systems get integrated, earlier rather than later?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: situational awareness, space control, policy, satellite attack responses

4.26 What force structure is required for the renewed air defense mission?

- Examine issues of cruise missile defense, ballistic missile defense, and layered defense generally.
- What have been the changes since 9/11?
- Where does NORTHCOM fit in, and what is its relationship with NORAD?
- What is the current and future mix and the active duty role, since most air defense was handled by the Air National Guard?
- Does the mission have an impact on acquisition?
- How does layered defense (i.e., missile and air defense) of the country drive AF roles, missions, and equipment?
- What is the policy for “shoot down” decisions?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: Noble Eagle, air defense, terrorism, total force

4.27 Evaluate the use of the combatant commander’s Directive Authority for Logistics (DAFL) in OIF/OEF.

- Should logistics forces be pooled together under the command of a logistics component commander?
- Should Services retain control of their own logistics?
- What is the appropriate balance between Service and combatant command control over theater logistics?
- Consider a case study of OIF and/or OEF logistics contrasted with Operation DESERT SHIELD/STORM.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: OIF, OEF, C2, logistics, organization

4.28 Airbase Opening (ABO) during Operation IRAQI FREEDOM (OIF).

- The transitions from seizure force to opening force to operating force were not smooth, and ABO planning was lacking – what guidance should be incorporated into joint doctrine to address these problems?
- To what degree are these problems attributable to deviation from existing joint doctrine?
- Consider a qualitative analysis in one or more ABO case studies (such as the opening of Talil AB, Iraq).

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: OIF, logistics, airbase opening, ABO, AMC, austere bases, access, case study, joint doctrine

4.29 AFDD 1-1 Leadership and Force Development

- How do we improve Air Force leadership, both NCO & officer?
- How do we improve warrior skill/knowledge training, physical and moral courage?
- How do we grow a culture of mentorship?
- How does the AF train leaders with the knowledge and skills sets needed to do more with less?
 - Suggest knowledge and skill sets that a leader might need to succeed in environments where they are asked to do more with less?
 - How to lead and motivate a team in an environment of personnel force reductions?
 - Do we have the right PME approach to develop leaders and the Air Force needed to meet future challenges? Does the PME process enable leaders to lead transformational change or does it reinforce the status quo?
 - Has PME evolved into a training program or is it still *PM Education*?
- Are there other Air Force missions that can be shed? If not, suggest additional missions and concepts that might be candidates and defend those ideas.
- Has the Air Force proclivity for engineering and hard sciences education shifted the focus away from other skill sets?
- Does the current OPR & promotion process enable transformational change, or does it reinforce the current culture?
- Suggest more ways the Air Force can improve its institutional self-assessment and self-criticism process.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 2

Key Terms: education, training, leadership, PME, transformation, personnel force reduction

4.30 CONUS vs forward basing

- Does the US have the right balance between CONUS basing and forward basing?
- In the wake of the containment of Iraq from 1992 to 2003 and the shift to an expeditionary Air Force model, review this model and suggest improvements, if any.
- Are US Air Force bases around the world in the correct locations?
 - In what regions would the US want to close bases? Why?
 - Suggest criteria that could be used to determine if a base should be closed or opened?
- Discuss the impact a selected base closure might have on operational timelines?
- Consequence management after a CBRNE attack is of great concern to the US. As a result, the State Dept. is in negotiations with other nations to create agreements where each party would provide assistance in response to a CBRNE attack.
 - What affect could this have US forward basing?
 - Discuss the impacts on other nations should the Air Force need to land contaminated planes on foreign soil? Suggest consequence management approaches to handle such incidents.
 - Should the Air Force (US) pre-build decontamination sites across the globe to counter these attacks?
 - Would this affect basing agreements?
 - Where and how should the US handle contaminated airplanes in various theaters during actions involving enemy use of WMD?
- In certain scenarios involving enemy employment of WMD, the humanitarian impacts on certain AORs could be unprecedented, requiring a major Air Force effort.
 - What effect would closing forward bases have on the AF's ability to meet its humanitarian mission objectives?
 - In light of the Dec 2005 Tsunami in Asia, are there lessons learned about humanitarian operations that could be learned for future natural and manmade disasters?
 - Discuss humanitarian needs and Air Force capability shortfalls to respond to CBRN employment in CENTCOM, PACOM, or EUCOM theater of operations.
- Discuss the economic impact military installations in foreign nations have on the local community?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Term: forward basing, WMD, humanitarian, capability shortfalls, base closures

4.31 Global Strike

- Discuss the tradeoffs in conducting Global Strike operations from CONUS vs forward bases?
- Discuss command and control relationships of various COCOMS for very prompt global strike assets, such as hypersonic craft, directed energy, long-range ballistic vehicles etc "silver bullet" operations.
 - For example: discuss command and control of a hypersonic craft launched from CONUS in support of a global COCOM such as US STRATCOM or SOCOM striking a target in support of an urgent need in another COCOM's AOR.

- What would be the effect if the Air Force converted all or some portion of the CONUS ICBM force to conventional warheads?
- Global Strike can be considered prompt or persistent, discuss the differences.
 - Does the distinction between the two make sense?
 - Define prompt in 2015.
 - In the F2T2EA process there is a necessary pause to permit decision makers to decide to “pull the trigger” and target and engage a target. Are there other ways to shorten the time needed to F2T2 and the decision-making cycle?
- Describe optimum prompt global strike architecture for the nation in 2015.
- Adversaries are working diligently to obscure targets in a wide variety of creative ways, suggest alternate approaches, techniques, and/or technologies that might mitigate these actions and improve targeting capabilities.
- Describe an optimum command and control architecture for special operators or platoon-level ground forces commanders to access and request support from extremely prompt global strike assets such as directed energy, space or near-space loitering weapons, or ballistic vehicles launched from great distances.

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Terms: global strike, forward bases, ICBM, F2T2EA, obscure targets, command and control, directed energy, hypersonic craft

4.32 Nanotechnology

- Discuss and suggest innovative ways to employ nanotechnology for the Air Force of the future.
- Discuss the environmental impacts of a nanotechnology-based weapon system.

POC: Tim Miller, SAIC, AF/A3SPI, 703-415-3338

Priority: 2

Key Terms: nanotechnology, environmental impact

4.33 Domestic strategic communications

- Many are of the opinion that Air Force is not as effective as the other Services in influencing political/civilian leadership.
 - Is this statement true? If yes, identify reasons why the Air Force is not as effective and present suggestions to improve the Air Force’s performance in that arena.
 - If it is not true, explain why and how the Air Force is effective at influencing the political/civilian leadership.
- How can the Air Force improve its ability to communicate the US’s mission and the Air Force’s role in that mission to the US population, political/civilian leadership, the other Services, and world?
- How should the Air Force communicate US policies and the Air Force’s role in those policies?

POC: Mr. George Monroe, AF/A8XZ, 703-692-6615

Priority: 2

Key Terms: influencing political process, Air Force communications, US policy, political/civilian leadership

4.34 Core Competencies

- What are, and what should be, the Air Force's core competencies?
- What are core competencies that the Air Force needs to grow?
- The Air Force is asking its personnel to develop new skills and capabilities to support the war efforts in Iraq and Afghanistan. Is this drawing the attention of the Air Force away from its core mission to "fly and fight?"
- Discuss alternatives to current processes to place personnel in the correct place to grow career, skills, expertise.
- How does the Air Force grow the Regional Affairs Specialist skill if it is not a career track?

POC: Maj Michele Green, AF/A5XS, 703-614-8394; Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Terms: core competencies, professional development, Foreign Area Officers, FAO, RAS

4.35 Total Force integration

- Suggest ways and alternatives to achieve total force integration.
- What should the Air Force of the future look like?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Terms: total force integration

4.36 Centralized Control/Decentralized Execution (in Network Centric Warfare)

- Discuss the merits and drawbacks of centralized control/decentralized execution.
- Suggest ideas to improve command control of decentralized operations conducted within the Network Centric Warfare construct.

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Terms: centralized control, decentralized execution, network centric warfare

4.37 An independent view of Space System Tasking

- AFSPC will soon be deploying many new space systems that may be tasked by various users (e.g. SBIRS, TSAT, Space Radar).
- Compare and discuss existing models for tasking such assets. For example, the Intelligence Community approach to tasking ISR systems, or the Air Mobility TACC model for tasking mobility aircraft.
- Suggest ideas and alternatives for command and control/tasking of such systems.

POC: Maj Dan McCutcheon, AF/A3SSO, 703-695-6900

Priority: 2

Key Terms: space system tasking, SBIRS, TSAT, Space Radar, intelligence community, command and control

4.38 Air Force support to Army modular transformation—a historical perspective

- Consider lessons learned from WWII air support to distributed ground operations and apply them to the 2010-2020 timeframe.
- Examine Operation MARKET GARDEN and the China-Burma-India theater.
- Use these lessons to frame the discussion of how the Air Force will be required to support post-transformation Army and/or Marine ground operations.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 2

Key Terms: transformation, logistics, ground operations, AMC, case study, joint doctrine

4.39 What is the Air Force role in the President's vision for space?

- If the United States, as well as a competitor, has a permanent presence on the moon will the Air Force have a role?
- Will there be a Coast Guard-like role for protecting space transports?
- Is there military utility to having a permanent manned base on the Moon?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: space operations, NASA, doctrine

4.40 What is the right mix of ground, air, and space assets to provide alternate means of command and control of nuclear forces and launching ICBMs?

- Should an aircraft UHF C2 capability remain?
- Should satellites (MILSTAR) become the primary/only source of emergency action messages and alternate missile launch capability (besides landlines) for the nuclear ICBM force?
- If the UHF is maintained, what is the right CONOPS?

POC: Reb Benson, SAIC, 703-415-3332

Priority: 2

Key Terms: ISST, SHF, C2, organization, Space Command

4.41 Assess the capability and identify the issues related to using ballistic missiles and production equipment from commercial entities for space launch.

- What are the legal liabilities to sale or lease of ICBM production equipment?
- What are policy (e.g., arms control) and implementation concerns and how can these be overcome?
- What types of control would need to be in place?

POC: Reb Benson, SAIC, 703-415-3332

Priority: 2

Key Terms: space operations, Space Command, NASA

4.42 What are the implications for strategic responsiveness if the Air Force adopted the Configurable Air Transport?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: mobility, AMC, doctrine

4.43 What role should wargaming, modeling and simulation and other automated tools have in campaign planning?

- What types of tools do campaign planners want and which would be most useful?
 - What do decision makers want?
- Examine the best industry interfaces. Which are most useful?
- How can wargaming and modeling and simulation contribute to adaptive planning?
- How can/should wargaming and experimentation be integrated into the campaign planning process?
- How should Analysis of Alternatives (AOAs) be done, what tools are needed?
- Discuss the lack of modeling and decision tools for operational tradeoffs (e.g., air versus space).
- How should the impact from the loss of an asset be assessed?
- Develop measures of merit for how various systems contribute to warfighting.
- How can the timelines for developing and obtaining results from wargames be shortened?

POC: JFCOM J-9 Orville “Bud” Hay

Priority: 2

Key Terms: AOAs, wargaming, modeling, programming, lessons learned

4.44 Assess the threat posed by adversaries’ use of air and space capabilities.

- What disruptive technology are adversaries investing in?
- How do other nations intend to use space power (communication, GPS, remote sensing) to facilitate terrestrial warfighting?
- How do other nations intend to use emerging technologies (directed energy, advanced missile technology, advanced air-to-air capabilities, computing, and advanced materials) to facilitate warfighting?
- Will other nations “leap-frog” over US legacy systems?
- Examine adversary acquisition of ISR.
- How could future adversaries mitigate US air and space advantages? What are the ramifications if they do find ways? What low-technology means might adversaries use?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: counterspace, space operations, Space Command, space control, foreign threat.

4.45 Assess the domestic and international impact of the US deploying weapons in space.

- Address overall impacts:
 - Define weaponization and what a weapon is.
 - Examine pathways to weaponization of space.
 - How do we get there from here?
 - Why would we weaponize space?
- Address international impacts:
 - How do adversaries, neutrals, and allies view space weaponization and how would they react if the US deployed weapons in space?
 - What are the international security issues that need to be addressed?
 - How should the US prepare for competition along each pathway and how would we deter adversaries from taking any of these pathways?
 - How might space weaponization impact the freedom of overflight of military, civil, and commercial systems?
- Address domestic impacts:
 - Does space weaponization enhance or weaken domestic security?
 - What are the unintended consequences of deploying—or using—weapons in space?
 - Should the US move now to take control of the “high ground”?
 - What public affairs approach should the US pursue to explain the case for weaponizing space?

POC: Mr. Gil Siegert, OASD (C3I) Space Policy Directorate, 703-607-0356

Priority: 2

Key Terms: space operations, space weaponization, foreign relations, overflight, commercial, force application, alliance, deterrence, public affairs, legal

4.46 What role could force application from space play in future military operations?

- Examine the value of space systems in responding rapidly to expected crises in the future (e.g., Space Operations Vehicle, Space Maneuver Vehicle, Common Aero Vehicle, Spaceplane, reusable launch vehicles, space-based weapons, conventional ballistic missiles, and hypersonic vehicles).
- Examine concepts of operation for new space force application systems.
- Examine the relationship between rapid response of such systems and commander’s decision timelines.
- What are the arms control implications of conventional weapons delivered from reusable vehicles?
- Are there significant differences politically between deployment from orbital and suborbital vehicles?
- Could commercial reusable launch vehicles (RLVs) be used to deploy conventional weapons?

- Evaluate results of recent wargames and their lessons for space operations.

POC: Mr. Gil Siegert, OASD (C3I) Space Policy Directorate, 703-607-0356

Priority: 2

Key Terms: space-based weapons, space operations, conventional weapons, reusable vehicles, arms control, orbital, suborbital, RLVs, hypersonic vehicles

4.47 What can the AF contribute to the Proliferation Security Initiative?

- How can it contribute to the intercept mission in the air, on land, and at sea?
- Discuss the policy and legal implications of such operations.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: counterproliferation, arms control, WMD, PSI

4.48 Should the Air Force begin to think about using a non-petroleum fuel source, such as nuclear-powered systems?

- What would be the implications for a propulsion acquisition strategy?
- Should the Air Force be considering nuclear-powered systems for air and space?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: R&D, energy, oil

4.49 What is the relevance of classic military literature to modern warfare?

- Examine the relevance of Clausewitz, Sun Tzu, and others.
- Evaluate potential new best practices that are more appropriate to current warfare (4th generation warfare, post-modern warfare).
- Evaluate Warden's five rings in the context of lessons from Iraq.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: history, lessons learned, OIF, OEF, doctrine, organization

4.50 Why are some Air Force assets still high-demand, low-density?

- Why has the problem not been mitigated?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: HDLD, organization, acquisitions

4.51 How could/should the Air Force forecast for the distant future?

- Examine past efforts, such as Air Force Horizons, Air Force 2025, Project Forecast. Are these models?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: modeling, AOAs, lessons learned

4.52 Are Technology Control Regimes beneficial?

- Discuss their effectiveness?
 - Do they create unintended consequences, and if so, what might they be?
- Looking at items on the US munitions list, are there any that should be removed or waived in order to advance U.S. national goals?
- What should a waiver process look like?

POC: Maj Chris Byrom, U.S. Department of State, ISN/SPO, 202-647-7907

Priority: 3

Key Terms: technology control regimes, US munitions lists, waivers

4.53 What role does the Air Force have in sea-basing?

- What should the Air Force be doing?
- How does this Navy concept aid Air Force air power?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: joint operations, doctrine, organization, transformation

4.54 Transformation Progress

- How do you measure transformation progress?
- What is the desired end state of Air Force transformation activities? If there is no end state, but rather a state of constant change, how does one measure and determine success?
- What does transformation mean?
- What qualities and organizational constructs is the transformed force suppose to possess?
- What role can the Air Force have in influencing other services' transformation?
 - How can the Air Force help? (e.g., working with the Army on Future Combat System implementation)
 - How can transformation be inter-service and not only intra-service?
 - How can the planning and budgeting of the services be integrated for transformation?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: joint operations, doctrine, acquisitions

4.55 What was done in the 1947 Key West talks relating to roles and missions?

- Should similar talks be held today and what roles should the different services have?
- What potential tradeoffs could be made between DOD and others in the interagency (State, NASA, etc.) that would reduce costs while keeping risk at an acceptable level?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: joint operations, organization, pol-mil

4.56 What are the obstacles and potential solutions to developing joint space doctrine?

- Survey the current roles performed by the Services and other national organizations in providing national security space capabilities.
- What conceptual, organizational, and cultural impediments exist to developing joint space doctrine?
- How well is JP 3-14, *Space Operations* (August 2002), being implemented? Why did it take so long to produce joint space doctrine?
- What role should the USAF play in resolving these impediments?
- What type of space doctrine is needed to support joint operations?
- If developed, what are the lessons learned, what are future applications?
- Are there significant overlaps if all services are expected to perform all space missions?
- Amplify existing doctrine on command relationships for command and control of space forces.
- Elaborate on the types of support space operators provide as warfighters—general, mutual, close, and direct support—with associated vignettes from recent operational experience.
- Provide a template for an establishing directive applied specifically to supporting space operations.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: Organization, culture, joint operations, doctrine, lessons learned, space

4.57 How did the Air Force experience with Iraqi no-fly zones (NFZ) affect Air Force performance in OIF?

- What policy objectives would be best supported by a NFZ?
- Are there viable alternatives to NFZs?
- What are metrics for evaluating a NFZ?
- How could the US experiment with alternatives?

POC: Dr Jeff Larsen, SAIC, (719) 637-8740

Priority: 3

Key Terms: NFZ, case studies, Iraqi Freedom, lessons learned

4.58 What are the implications of foreign sourcing of defense materials, especially in a changing political environment?

- How are financing issues handled?
- What might be the effect of shifting alliances?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: commercial space systems, FARs, surge capacity, military needs, acquisitions, pol-mil

4.59 How can the DOD prevent organizational seams from becoming operational seams in air and space operations?

- How did the space community respond to the Space Commission and Hart-Rudman Commission?
- What are the issues related to the collision between space vs. warfighter cultures?
- Examine AEF, active-reserve component, and regional command organizational seams.
- Under what conditions might it be appropriate to consider a separate Space Force?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: organizational seams, organizational culture, space, warfighter

4.60 Discuss how US export policies could endanger US national security.

- Assess US options for export control of militarily-significant technologies.
- What is the impact of the increasingly multi-national character of defense industries?
- What are the issues that confront DOD as it considers strategies to either shape the commercial environment or adapt to its influences in a way that is most beneficial to national security interests?
- What are the intellectual property issues involved?
- What is the impact of foreign students and companies in the US?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: space commerce, international regulatory regimes, competition, insurance, export control, financial markets, DOD, arms control, nonproliferation

4.61 Describe alternative strategies for resourcing air and space systems through cooperative, leasing, or financial reimbursement arrangements.

- What capabilities could the military divest to the civil or commercial sectors?
- Assess various divestiture strategies.
- What impact would such policies have on the funding of future air and space systems?
- How are cost differences between military-supplied air and space and out-sourced air and space assessed? (airlift, bandwidth, support services, ISR, security)
- Examine international experiences with such arrangements.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: resourcing, divestiture, leasing, out-sourcing, air and space systems, acquisitions

4.62 What are the key personnel issues facing the Air Force?

- Examine such issues as:
 - Combat training for support personnel
 - Airman filling traditional Army roles
 - End-strength: what is proper force size, given changing missions (e.g. air defense)
 - The mix between the active force and the reserve component
 - The “blended wing” concept
 - Total force retention in face of high OPSTEMPO
 - Balance between active and reserve component in terms of benefits
 - Recruiting and retention in high skilled technology areas – Does the Air Force compete with private industry or outsource instead?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: personnel, total force, recruiting, retention, OPSTEMPO, PERSTEMPO

4.63 Effects-Based Operations (EBO) in Low Intensity Conflict/Operations Other than War/Stability Operations.

- Examine the current and historical record and evaluate the applicability of these EBO principles to lower-intensity conflict, conflict other-than-war, and to stability operations following major combat.
- Explore concrete examples of how the principles of EBO apply to (or don’t apply to, or are especially applicable to) the conduct of lower-intensity conflict and the conduct of operations after major combat operations have concluded.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 3

Key Terms: lessons learned, case studies, joint doctrine, planning, SASO, MOOTW, post-conflict, OIF, OEF

4.64 Effects-Based Operations (EBO) in military history

- Analyze one or more of the EBO principles set forth in AFDD 2, present historical instances in which these principles have been employed, and examine the results thereof.
- Consider in particular examples in the history of air and space power.
- Examine cases where the principles have been misunderstood or misapplied.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 3

Key Terms: lessons learned, case studies, joint doctrine, planning, doctrine

4.65 How can/should the Air Force Auxiliary (Civil Air Patrol) role be expanded for emerging air/space/cyber roles and functions?

- How can we best expand on the “air” dimension with space and cyber functions?
- Should expansion be limited to increasing emphasis on support areas such as medical, law enforcement, and chaplain?
- Is homeland defense and civil support an appropriate arena for role expansion?

POC: Lt Col Kenneth Wessels, AF/A3SHA, 703-696-3637

Priority: 3

Key Terms: Air Force Auxiliary, Civil Air Patrol

5. INFORMATION OPERATIONS AND INFORMATION WARFARE

[Related topics: 2.9, 2.10, 2.11, 2.35, 2.36]

5.1 Information Operations Policy

- As the Air Force's information operations capabilities improve, what are the law and policy issues that need to be addressed?
- Discuss ideas about Air Force information operations organization.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: Information Operations, law, policy

5.2 What is the optimum mix of systems to provide robust and reliable communications?

- Which technologies are best suited for "reachback" communications?
- Which are cheapest? Most survivable? Most reliable?
- What are the bandwidth issues?
- Which technologies are best suited to handle the last mile?
- Evaluate the potential of the following systems: laser communications, space systems, UAVs/high-altitude airships as relay, cellular systems, combat aircraft as relay.
- Is there a network architecture incorporating some or all of the above that is desirable? If so, how should such a system be developed?
- What tradeoffs should be examined in adding on-board processing to ISR and combat systems to reduce communication requirements?
- What commercial systems are likely to be available, and how does this affect this analysis? Can space assets be used as a "CRAF"-like concept?
- What are the costs, both to the military and to the civilian economy if these satellites are no longer available to their civilian customers?
- What commercial systems may be available to an adversary, and how does this affect the types of systems the US should use? What are the security implications?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: commercial space systems, satellite protection, surge capacity, CRAF, communications, imagery, remote sensing, shutter control, C2

5.3 What is the optimum mix of systems for potential future conflicts to provide robust and reliable surveillance, reconnaissance and gathering of intelligence?

- What are the most promising technologies for dealing with the WMD problem?
 - What is the tradeoff between air and space platforms?
- What role do ISR assets have in the spectrum of "Find, Fix, Track, Target, Engage, Assess" (F2T2EA)? In which areas of this spectrum is ISR weakest?
- Which technologies are best suited for electronic and signals intelligence? On what platforms or combination of platforms (space, high-altitude UAV, high-altitude airships, and aircraft) should these technologies be placed?

- What is the optimum mix of aircraft, UAVs, satellites, and sensors (optical, IR, laser, multi-spectral, hyperspectral) to provide surveillance and reconnaissance?
- With new radar and sensing technologies on the next generation of aircraft, is space sensing necessary?
- What systems are available to prospective adversaries? If they use these systems, can the US achieve either tactical or strategic surprise, or have we entered an era of transparency in military operations?
- How can/should the US deal with entities that use satellite or other ISR capabilities to aid adversaries?
- Can/should the US purchase all ISR capability (use “checkbook shutter control” to limit an adversary’s use)? Will such a strategy always be possible?
- What are the implications of foreign investments in anti-ISR and other disruptive technologies?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: commercial space systems, satellite protection, surge capacity, CRAF, communications, imagery, remote sensing, shutter control, ISR

5.4 How should the operations of multiple Intelligence, Surveillance, and Reconnaissance (ISR) platforms be integrated and fused?

- What is the appropriate C2 architecture for Processing, Exploitation, and Dissemination (PED) of theater airborne ISR assets?
- Where is the best location for ISR PED—in the AOC, via Reachback ops, split-based ops, or another option?
- Is a separate architecture needed for Time-Sensitive Targeting (TST) vice non-TST?
- With limited exploitation assets—facilities, equipment, and personnel—how are the increased demands from multiple, simultaneous operations and platforms handled?
- What is the appropriate C2 structure/relationship for ISR PED assets—especially Reachback PED assets--OPCON, TACON, or Direct Support?
- How does the USAF integrate and capitalize on Joint, Coalition/Allied and Total Force ISR PED capabilities?
- How should commercial assets be better incorporated to compensate for shortfalls in military ISR capabilities or availability?
- Are ‘turf battles’ likely between organizations owning the various platforms?
- Is there a CRRA panel for ISR?
- Discuss warfighting integration and the CIO.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: ISR, integration, reachback, PED

5.5 Analyze the DOD role in protecting cyberspace for the United States.

- Summarize existing national and DOD guidance (e.g. PDDs, national plans, DOD directives).
- Conduct a deficit analysis between infrastructure threats and existing protection programs.
- Analyze possible new approaches to protection of the national infrastructure, and how to address the threat.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: IO, IW, NII, Defending America's Cyberspace, Homeland Defense

5.6 What are the implications and issues surrounding IO and Homeland Defense?

- What are the areas of IO that could have a beneficial impact on Homeland Defense?
- What are the legal and ethical limits that must be taken into consideration?
- What are the proposed procedures for implementing an IO campaign within the Homeland Defense arena?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: IO, Homeland Defense

5.7 What unintended consequences (or “blowback”) could result from the employment of computer network attacks (CNA)?

- Would the purported deniability or non-traceability of electronic attacks prevent attacked societies from focusing on the originating country or group?
- Just as traditional US military capabilities have shown a clear progression away from mass effects against societies and toward precision effects against military capabilities, should IW policy and capabilities, if/when developed, focus on precision rather than mass information effects?
- What is the effect of large-scale CNAs that address civilian infrastructure and defense issues? What are the policy issues associated with these various scenarios?
- How does the unpredictability of the “weapon” create law of armed conflict (LOAC) issues?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: IO, IW, LOAC, law of armed conflict, unintended consequences, policy issues, CNA, blowback

5.8 How can we improve IO in a coalition/allied environment? (Also see topic 5.14)

- How do security concerns and improved technologies impact IO in a coalition/allied environment? What do/don't we share or disclose? How do we overcome these concerns? How does this issue relate to homeland defense?
- Do current Concepts of Operations need to be changed? How?

- How have allies such as the UK or NATO handled IO better? Examine the concept operations for allied Public Information Officers in relation to US Public Affairs Officers.
- Analyze real world and exercise examples of successes and failures of IO operating in a coalition/allied effort.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: IO, IW, coalition, security, homeland defense

5.9 How do we measure nation-states'/non-state entities' levels of vulnerability to IO?

- Does the US do too much “mirror-imaging”? What models can be used to avoid errors made my mirror-imaging?
- Examine portions of a potential adversary’s infrastructure. Include insights on why categories were chosen, application to other analysis, and potential interrelationships between categories.
- How do we determine the key nodes/centers of gravity (COGs) in an adversary’s information infrastructure? What models are useful in determining nodes/COGs for Influence Operations?
- Compare and contrast kinetic and non-kinetic effects.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: IO, IW, vulnerability, mirror imaging, infrastructure, COG, targeting, Influence Operations

5.10 What are measures of effectiveness (MOEs) for IW, or one of its disciplines?

- What are ways to measure IW contributions in terms of denying data, information, knowledge, understanding, and operational wisdom? How can this be related to achieving the commander’s objective?
- How can the Unified Joint Task List (UJTL) MOEs be used as a foundation for more sophisticated MOE development?
- Can Joint Munitions Effectiveness Manuals (JMEMs) be developed for IW?
- What do commanders expect of IW and how can those expectations be measured?
- How can IW MOEs be validated?
- What are some MOE categories (e.g., planning process, programmatic, logistical, time, damage, perception management, etc.)?
- What are ways to conduct IW combat assessment (like battle damage assessment)?

POC: INSS, DSN 333-2717, Comm 719-333-2717

Priority: 1

Key Terms: IO, IW, measures of effectiveness, Unified Joint Task List

5.11 What is the effect of international media on US military operations and on IW/IO planning?

- Citing case studies as examples, discuss which IW/IO means were most important for a given side in a particular conflict.
- How should the AF and DOD provide international public information?
- What is the effect on the US military actions by not using the international media or having an implemented global communications strategy?
- How can IW/IO planning better involve the international media?
- What is the relationship between strategic communications and IO?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: IO, IW, media, IO planning, Kosovo, Serbia, Afghanistan, Iraq

5.12 What is the interrelationship of themes between Public Affairs (PA), Psychological Operations (PSYOP), and Military Deception (MD)? (Also see topic 5.22)

- What is the advantage gained by combining PA, PSYOP, MD and OPSEC under a coordinated planning effort?
- In an Information Warfare Flight or a Joint Force Commander IO Cell how are PA, PSYOP and MD themes coordinated and deconflicted effectively?
- Who are the key audiences for PA, PSYOP and MD? Is there a concept of acceptable collateral (media) damage if a message is received by the wrong audience?
- Are there any legal protections for PA, PSYOP, MD if there is collateral damage? Are there additional means for mitigating the collateral damage/legal problems?
- How can PA maintain “integrity and credibility” while working with PSYOP and MD?
- Discuss the separation between Public Affairs (counter-propaganda) aimed at a US audience vs. activities directed at foreign and/or hostile audiences
- What are the lessons learned from post 9/11 experiences in Afghanistan or Iraq that support
- Should PA remain a capability within Influence Operations?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key terms: IO, IW, deception, PSYOP, propaganda, public affairs, media, international

5.13 Does EW belong in IO?

- What are the operational and doctrinal considerations?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key terms: IO, IW, EW, electronic warfare, doctrine

5.14 How can the Air Force develop PSYOP capabilities and integrate them into a Joint IO environment? (Also see topic 5.8)

- What are the Air Force's goals in developing further PSYOP capabilities?
- What is the best means for the AF to ensure JPOTF takes Air-centric IO/PSYOP requirements (themes) into consideration?
- How can Commando Solo be better utilized as a non-SOF IO platform vs. a SOF PSYOP platform?
- What AF educational requirements can be created to ensure better PSYOP and Joint integration?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: IO, IW, PSYOP, JPOTF, Commando Solo, education.

5.15 What are the ramifications of hostile IO/IW threats to the US, its forces, and allies?

- Analysis of key strategic and operational IW threats to the US past and present.
- Include nation-state and non-state-entity operations.
- Possible deterrence of such activity.
- Future implications.
- Include case studies.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: IO, IW, deterrence, anti-US, political-military, public diplomacy, terrorism

5.16 What are some important considerations for building an IW capable force? (Also see topic 5.27)

- Examine Total Force capabilities.
- Should a person be trained in all aspects of IW or should they specialize?
- What is the proper training for Influence Operations and Effects-Based Operations?
- Should we train to Joint or Service standards/doctrine?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: IO, IW, information warrior, standards, training, entrance testing and exams, AFSCs, Air Force Reserves (AFR), Air National Guard (ANG), ARC

5.17 Are all Information Operations in essence Influence Operations with the common goal of gaining and maintaining an influence effect?

- Does the AF IO Doctrine adequately define IO?
- What is a workable definition of Influence Operations?
- What are the appropriate military elements of Influence Operations for Air Force Operations (Military Deception, PSYOP, OPSEC, PA)?
- Are Joint definitions the best approach to IO?
- Is Air Force doctrine compatible with Joint concepts?

- Are Influence Operations more appropriately at the top of the hierarchy (of Information Operations) with Electronic Combat Operations (EW) and Network Operations (CNO) as subordinate mission areas within a measurable environment (Electromagnetic Spectrum and Cyberspace)?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, EW, CNO, OPSEC, MILDEC, PSYOP, PA, Targeting, Influence Operations

5.18 Higher level IO effects include actions to Destroy, Deny, Degrade, Disrupt, Deceive or Usurp targets. What are key considerations that must be planned for to synchronize and deconflict those effects?

- What is the definition or unintended consequences or “blowback” in relation to IO actions?
- How can Intelligence Gain/Loss considerations be factored into the targeting process to best serve the needs of both ISR personnel and targeteers?
- What collateral damage considerations are unique to IW? Consider non-kinetic/non-lethal options.
- How important is the consideration of compromising a special capability to the IW campaign? Is there a risk-analysis model that can be applied to use of special capabilities to mitigate compromise?
- How can IW effects be embedded in the ATO to insure integration and to comply with the concept of parallel and simultaneous operations? Is the use of a “shadow” IO Tasking Order valid to protect use of IW capabilities, but to synchronize IW effects with kinetic ATO events?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, EBO, ATO, C2W, targeting, ISR, Influence Operations

5.19 How does IO contribute to full-dimensional force protection (critical nodes of personnel, facilities, equipment and technologies)?

- What new critical infrastructure protection processes/procedures/measures need to be introduced to counter the possibility of hostile activity?
- What IW-related analytical or decision-making tools does the air commander require to ensure force protection?
- What commercial off-the-shelf (COTS) or emerging technologies, media resources, and human factors analysis would enhance force protection efforts?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, force protection, COTS, human factors, media

5.20 What tools do commanders need to conduct IW at each level (Service component, JTF, Combatant Commander)?

- How are the tools linked together? How could/should other links be made?
- Discern commanders' requirements for automated or semi-automated IW mission planning tools and common operating pictures (COPs).
- What tools would help ensure that the commander is considering all targeting options (kinetic/nonkinetic, lethal/nonlethal)?
- How can advanced technology, human factors, and human computer interaction understanding be used to enhance these tools?
- How can the need for these tools be translated into operational and acquisition requirements?
- How can education and training programs be used to effectively integrate these tools with force protection and other related base operations?
- How can visualization of IO/IW activities be most usefully integrated with other information presented to the commander?
- What measures of effectiveness would be embedded in such a visualization/map?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, mission planning, targeting

5.21 How can Psychological Operations (PSYOP), using capabilities unique to the Air Force, be used most effectively in support of air, space, and cyber activities?

- What does psychological preparation of the battlespace (P2B) entail, from both an operational and conceptual standpoint? How should P2B be conducted at the strategic, operational, and tactical levels?
- How can PSYOP be folded into the target development and selection process in support of joint or combined air combat operations? How does PSYOP fit into the effects-based operational framework? What is the Air Force role in the JPOTF of tomorrow?
- What role(s) should PSYOP expeditionary teams (PETs) play during air contingencies and EAF deployments?
- What is the synergy between PSYOP and human-factors analysis? How can this synergy best be achieved and optimized? What commercial off-the-shelf (COTS) or emerging technologies could be harnessed to enhance PSYOP capability?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, aerospace PSYOP, P2B, PETs, human factor analysis, COTS, Influence Operations.

5.22 What should the role of public affairs (PA) be in IW? (Also see topic 5.12)

- The Air Force Chief of Staff has directed PA participation in IW Flights (IWF). What role should PA have in these Flights?
- How will PA contribute to the synergism of IW?
- Examine PA/Command IW relationships.

- What type of "public affairs strategy" should we pursue in respect to defending the national infrastructure, DOD and AF against potential IW attacks?
- What type of public affairs strategy should be created to educate the public in the consequences of attack? Examples might include: crashing the FAA air traffic control network (possibly bringing down airliners filled with innocent civilians); shutting down the US power grid (causing civilian casualties); interfering with 911 networks, sending emergency vehicles to the wrong locations?
- What is the role of AF public affairs in cases where general attacks against civilian infrastructure impacts AF operations?
- What are some strategies that PA could employ to become more proactive rather than reactive?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, public affairs, PSYOP, information infrastructure.

5.23 How should IW address the risk management issue for IO preparation of the battlespace (IOPB)?

- Is risk management properly addressed in current IW TTPs? What changes if any are needed?
- How do we determine the level of acceptable risk?
- Are current Multidisciplinary Vulnerability Assessments (MDVA) acceptable tests to determine if risk management procedures are appropriate?
- Do the Operational Risk Management procedures used to design the INFOCON process also apply to the other disciplines of defensive counter information?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, defensive counter-information, risk management, IO vulnerabilities, TTPs, operational planning, Multidisciplinary Vulnerability Assessments, IOPB

5.24 Explore the concept of computer network exploitation (CNE)/"Active Defense"/responsive action.

- Define concept of CNE/"active defense" in cyber-warfare and how it is distinguished from related CND, Computer Network Attack (CNA), and Info Assurance activities.
- What advantages does having authorization and capability to conduct CNE/"active defense" as part of CND provide? What are the implications of not having authority?
- What policy and legal considerations apply to CNE/"active defense" and the establishment of ROE for its prosecution?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, CNE, active defense, legal, cyber-warfare

5.25 What lessons can be learned from the private sector regarding defensive IW? (Also see topic 5.44)

- What are the similarities and differences in the challenge of protecting the information resources of globally dispersed operations?
- How does a large, geographically dispersed organization identify, protect, and defend its most critical information assets?
- What is the best mix of centralized/decentralized protection and reserve/backup paths and systems in defending the most critical information assets?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, defensive IW, lessons learned, private sector, commercial

5.26 How can DOD and the Air Force go beyond computer-focus within the Information Condition (INFOCON) system to a full-spectrum IW focus?

- Is it possible to broaden scope so widely?
- What is the utility of moving to a full-spectrum focus?
- What organizational relationships need to be formed to make this happen?
- What are the necessary reporting chains and means to ensure compliance?
- What indications and warning data are necessary to expand to a full-spectrum threat condition?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, INFOCON

5.27 Examine the possible roles and responsibilities of Air National Guard and Air Force Reserve units in IO. (Also see topic 5.16)

- What IO roles and missions should the reserve components assume? (Include homeland defense missions in the analysis.)
- What units might be formed or slots created which will enable the United States to better utilize its IO-trained resources?
- How can their capabilities be better integrated into Total Force capabilities?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, Air National Guard, ARC, Reserve, National Guard

5.28 IO is conducted across all battlespaces. What type of organizational structure is best suited to accomplish the IO mission?

- Who should have the national IO lead?
- How do you best integrate and synchronize the diplomatic, informational, military, and economic (DIME) aspects?
- How does the Interagency Working Group structure feed the Joint Force Commander IO Cell? How does it feed Strategic Command?

- Should there be a new model for conducting IO, such as an “IO Combatant Commander,” MAJCOM, or IO Task Force? What roles would each organization have? What should the organization look like?
- How does Strategic Command conduct command and control of IO? Who has the decision authority for CNA, PSYOP, and Special Information Operations? How does this organization interact with the Services? What would be their individual responsibilities?
- How should IO be addressed on the Air Staff?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: IO, IW, force structure, information infrastructure, C2, command and control, Strategic Command

5.29 What are the implications of international treaties and agreements in the IW realm?

- Article 5 of the North Atlantic Treaty says that “an armed attack against one or more of them in Europe or North America shall be considered an attack against them all.” How does this relate to cyber attacks?
- How would an equitable arms control agreement be defined? What benefits might accrue? How are USAF equities protected?
- How are other IW powers’ technological advances anticipated and addressed?
- What arms control mechanism(s) and forum/fora would be most appropriate for IW arms control? Is it possible to track/identify foreign IO/IW technology capabilities?
- How would the US Government identify, vet, and publish such a foreign “IW Militarily Critical Technologies List?” Given the short life cycle and rapid evolution of IO technologies, is this feasible given the existing bureaucratic processes?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, arms control, CNA, CND, IW agreements, critical technologies, proliferation

5.30 How will evolving IO affect traditional deterrence and escalation dilemmas during international crises?

- What advantages does information dominance give during crisis negotiations?
- How have information advantages been used to intimidate crisis adversaries?
- Does information asymmetry make escalation to war more/less likely?
- Do evolving IO make it more/less difficult for civilian principals to control military affairs under crisis conditions?
- What role can IO play in improving international crisis outcomes?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, Crisis management, deterrence, escalation

5.31 What is the relationship between cyberspace and IO?

- What are the implications for the Air Force?
- What is the appropriate division of responsibilities between the national level and the DoD?
- Does the nation need a separate cyber force?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, Doctrine

5.32 How will continuing rapid changes in technology affect IO?

- How will changes in global telecommunications, embedded devices, increasing bandwidth, etc., affect the use of IW by potential adversaries?
- How will the increasing pace of technological change affect our ability to defend against IW? How should these improved technologies be used in conjunction with our allies? What concerns exist regarding foreign military sales or the possible compromise of technology?
- Bandwidth limitations have traditionally constrained information delivery to warfighters. With increasing bandwidth available, what useful information should be added and what are ideas for displaying information more intuitively? Should some of the new bandwidth be spent to strengthen encryption?
- What is the impact on availability, integrity, authentication, confidentiality, and non-repudiation of information?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, advanced technology, technology forecasts, technology

5.33 How will continuing rapid changes in human factors analysis affect IW?

- How can new precision profiling techniques, including speech pattern analysis, lie detection, etc., be used in deception and psychological operations campaigns?
- Are resources being provided to do analysis of low level target individuals and groups (as well as high profile targets) using classified sources? Is that information immediately available to end users?
- How can cultural studies assist IO campaigns?
- Address the use of human conditioning for exploitation of EW, CNA, OPSEC.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, human factors analysis, behavioral analysis, EW, PSYOP.

5.34 What constitutes an IO campaign? For us and/or against us?

- Does IO/IW conditioning of adversaries and allies improve the pre-hostilities environment?
- Is it possible to determine specific start and stop dates, or is IW continuous?
- How is the end-state defined in an IW campaign?

- Should there be an IW task force set up?
- What are the phases of an IW campaign? Where do they synchronize with conflict operations?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, campaign end, end state, task force

5.35 Examine the traditional concepts of maneuver and firepower as they relate to cyberspace.

- By changing addressing schemes, communications protocols, and their means, the cyberspace location of assets can be changed. Such changes offer the opportunity for maneuver in cyberwarfare.
- How can maneuver concepts improve AF/DOD ability to conduct computer network defense (CND)?
- How can one measure the disruptive effects of defensive maneuver on AF/DOD ability to communicate?
- What would constitute “firepower” in cyberspace?
- Can the synergy between maneuver, firepower, and deception that is found in the physical battlespace be replicated in cyberspace?
- How do maneuver and firepower concepts in cyberspace relate to those in other realms?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, cyberspace, maneuver, space

5.36 How can the USAF IO and information technology capabilities be applied best in environments associated with asymmetric warfare or humanitarian operations?

- Apply real world case studies and multiple analytic approaches in addressing this issue. Address successes and failures as appropriate.
- Do our current TTPs, CONOPS, etc., correctly address how we should apply IW during conflict?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, MOOTW, SSC, Kosovo, aerospace power, Mogadishu, Afghanistan

5.37 How do our efforts to operate in and control cyberspace and information relate to operations in other global commons?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, space, ocean, freedom of navigation

5.38 Compare Economic, Political, and Religious media reports in the Western and Muslim media. Can the Muslim Arab/Arab media be useful to in supporting US policies and objectives?

- Does the Army's SCAME process offer an effective means of pursuing these options?
- Compare Arab Arab/Muslim media reaction to critical US policy/strategy plans.
- What have been the repercussions of US reactive responses to Arab/Muslim media?
- Compare the credibility and effectiveness of Muslim media with the regional audience, the US audience, and the world audience.
- Can US media be a positive force in Arab/Muslim relations?
- Would Arab/Muslim lead reporters and anchors improve the US image and assist US objectives?
- How do AF efforts fit in with DOD and national efforts to conduct international public information efforts and ensure national will in support of USG policies and objectives?
- How do AF commanders use public affairs and linkages to IW capabilities to negate or mitigate the negative impact of adversary propaganda on AF personnel?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key terms: IO, IW, propaganda, public affairs, international

5.39 Construct an IO roadmap for QDR 2010.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, Quadrennial Defense Review, emerging threats, transformation

5.40 What is the best structure for providing IW support to a NAF commander?

- How do embedded IW personnel within the Air Operations Center interface with the Air Force Computer Emergency Response Team (AFCERT)?
- What is the AOC interface with the Joint IO Cell and Joint Task Force-Computer Network Operations?
- What are the roles and responsibilities of the services vs. STRATCOM?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: IO, IW, NII, Defending America's Cyberspace, homeland defense, AOC

5.41 Conduct a system dependency analysis of network centers of gravity for cyberspace.

- Examine interdependencies within a network
- Evaluate interdependencies with systems that are key to network operations/

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: COG, network relationships, key nodes

5.42 Model the effects of an IO attack.

- Create a set of measures for evaluating an attack.
- Identify methods of monitoring attack effects.
- Develop a restoration strategy/policy.
- Examine the transition from risk management to consequence management.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: CM, BDA, assessment, effects, IO, CNA, CND, modeling, simulation

5.43 Examine cyber exercise planning.

- Consider cyberwarfare as an element of a larger exercise vs a cyber-focused exercise.
- Evaluate how useful past cyber exercises have been.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: modeling, simulation, wargame, tabletop, exercises

5.44 Examine how commercial information operations practices can be leveraged for military information. (Also see topic 5.25)

- Identify effective bandwidth management techniques.
- Evaluate the effectiveness of acquisition processes for meeting IO requirements, given the rapid pace of technological advancement.
- Examine methods of ensuring configuration control within a network.
- Evaluate methods of networked collaboration that might facilitate battle management in cyberspace.
- Consider how to best ensure authentication and integrity of data in a network environment.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: private industry, IA, information assurance, 5 pillars, resource management

